

LAW OFFICES OF KWANG M. LEE

3731 WILSHIRE BOULEVARD, SUITE 514
LOS ANGELES, CALIFORNIA 90010

TELEPHONE (213) 927-8007
FACSIMILE (213) 927-8001

October 19, 2010

VIA FACSIMILE and U.S. MAIL

Planning Department
Attn: Maggie Sanchez
23920 Valencia Blvd., Suite 300
Santa Clarita, CA 91355

RE: Calgrove Kennels

Dear Ms. Sanchez:

Thank you for taking my call and answering a few of my questions today. I represent Mr. Michael Lovingood at Calgrove Kennels located at 24314 The Old Road, Newhall, CA 91321. I realize that the property is part of the County of Los Angeles and not a part of Santa Clarita. However, my client is concerned that One Valley One Vision, "OVOV", will result in the City of Santa Clarita expanding spheres of influence and causing changes to zoning laws that may have an adverse affect on his place of business.

The open ended question is what effect will OVOV have on Calgrove Kennels? There are a few specific questions if and when OVOV is adopted and implemented. One, will Calgrove Kennels be allowed to continue operations as usual? Two, will there be any building restrictions placed on Calgrove Kennels? If yes, what are the potential types of restrictions? This question results from the fact that Mr. Lovingood has a lot of undeveloped areas on his property. Three, will Calgrove Kennels be allowed to be sold in the future without restrictions of any kind? Any type of restrictions may result in significant diminished sales potential.

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Sincerely,

John Lee, Esq.

cc: Michael Lovingood

RECEIVED
PLANNING DIVISION
OCT 21 2010
CITY OF SANTA CLARITA



Los Angeles County
Department of Regional Planning

Planning for the Challenges Ahead



Richard J. Bruckner
Director

October 26, 2010

John Lee, Esq.
3731 Wilshire Boulevard, Suite 514
Los Angeles, CA 90010

RECEIVED
PLANNING DIVISION

NOV 02 2010

CITY OF SANTA CLARITA

RE: ONE VALLEY ONE VISION

Dear Mr. Lee:

I am in receipt of your letter to Maggi Sanchez, City of Santa Clarita staff, dated October 19, 2010, regarding One Valley One Vision, a joint planning effort between the City of Santa Clarita and the County of Los Angeles to update each jurisdiction's long-range planning documents for the Santa Clarita Valley. It is my understanding that you represent Calgrove Kennels, which operates a dog kennel on a property located at 24314 The Old Road. Since your client's property is located in the jurisdiction of the County of Los Angeles, your letter has been referred to the Department of Regional Planning for a response, with a copy provided to City of Santa Clarita staff.

The currently adopted land use designation of the property is W (Floodway/Floodplain). The currently adopted zoning designation of the property is A-2-1 (Heavy Agricultural Zone - 1 acre minimum lot size). Pursuant to the One Valley One Vision effort, Department of Regional Planning staff is proposing changes to the land use and zoning designations of the property. The proposed land use designation of the property is IL (Light Industrial). The proposed zoning designation of the property is M-1 (Light Manufacturing Zone). Please refer to the attached maps. These maps were generated by the OVOV-NET interactive mapping application, which can be accessed online at <http://planning.lacounty.gov/ovovnet>.

According to Section 22.32.040 of the County Zoning Ordinance, a dog kennel is a permitted use in the M-1 zoning designation. Therefore, the existing dog kennel will be able to continue operations if the proposed land use and zoning designation changes are adopted by the Board of Supervisors.

If the proposed land use and zoning designation changes are adopted by the Board of Supervisors, any future development of the property would need to be consistent with the IL land use designation and the M-1 zoning designation. The County's Draft Santa Clarita Valley Area Plan (developed pursuant to the One Valley One Vision effort) states that the IL land use designation "provides for industrial districts in areas with adequate access, infrastructure, and services and is intended to accommodate the most intensive types of industrial uses allowed in the planning area. Allowable uses in this designation

320 West Temple Street • Los Angeles, CA 90012 • 213-974-6411 • Fax: 213-626-0434 • TDD: 213-617-2292

John Lee, Esq.
October 26, 2010
Page 2 of 2

include storage and distribution of goods; vehicle storage; contractor's storage facilities; batch plants; heavy equipment repair and sales; wholesale sales; heavy vehicle repair; and supportive commercial uses. Allowable uses shall have a maximum Floor Area Ratio (FAR) of 1.0. Specific allowable uses and development standards shall be determined by the underlying zoning designation." Regulations concerning the M-1 zoning designation, including specific allowable uses and development standards, are contained in Part 2 of Chapter 22.32 of the County Zoning Ordinance. The County's Draft Santa Clarita Valley Area Plan can be viewed online at <http://planning.lacounty.gov/ovov>, while the County Zoning Ordinance can be viewed online at <http://planning.lacounty.gov/luz>.

I hope that this information is useful to you. If you have any questions, please contact me at mglaser@planning.lacounty.gov or (213) 974-6476 between 7:30 a.m. and 5:30 p.m. Monday through Thursday. Our offices are closed on Fridays.

Sincerely,

DEPARTMENT OF REGIONAL PLANNING
Richard J. Bruckner,
Director



Mitch Glaser, AICP
Supervising Regional Planner
Countywide Studies Section

MWG:mwg

Attachments

C: Jason Smisko, City of Santa Clarita

24314 The Old Road -- Current Land Use & Zoning Designations



Legend

- OVOV area
- OVOV area buffer
- mask
- Parcel Boundary
- Freeway Shield
- Ramp, Interchange, or Feeder
- Ramp
- Ramp
- Ramp
- Ramp
- Freeway
- Arterial Street
- Highway
- Zoning (Boundary)
- Santa Clarita Valley Area Plan - adopted
- AP - Airport
- C - Commercial
- RM - Hillside Management
- M - Industry
- RT - Non-Urban 1 (0.5 du/acre)
- N2 - Non-Urban 2 (1.0 du/acre)
- DUELM - Open Space (Bureau of Land Management)
- O-NF - National Forest
- D - Open Space
- OP - Open Space Parks
- Q-W - Water Body
- P - Public Service Facilities
- RR - Resort Recreational
- SP - Specific Plan
- TC - Transportation Corridor

Scale: 1:2,408



0 70 140 210 m.

This map is a user generated static output from an internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Letter No. D1

Letter from Law Offices of Kwang M. Lee, October 19, 2010

Response 1

The comment acknowledges that while the property in question is located within the Los Angeles County (County) unincorporated area, there is concern with regard to the City of Santa Clarita and its sphere of influence. The comment raises economic and political issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 2

The comment asks what would happen to the Calgrove Kennels located on 24314 The Old Road, Newhall, California. The current County Santa Clarita Valley Area Plan land use designation of the property is W (Floodway/Floodplain). The current County zoning designation of the property is A-2-1 (Heavy Agricultural Zone, 1-acre minimum lot size). The proposed County Area Plan land use designation of the property is IL (Light Industrial). The proposed County zoning designation is M-1 (Light Manufacturing Zone). A dog kennel is a permitted use in the M-1 zoning designation. Therefore, the dog kennel will be able to continue operations if the proposed County Area Plan land use and proposed County zoning designations are adopted by the Board of Supervisors.

Response 3

The comment asks if the kennels will be allowed to continue and will there be any building restrictions. Please see **Response 2** above with regard to continuance of use. Regulations concerning the County's M-1 zoning designation, including specific allowable uses and development standards, are contained in Part 2 of Chapter 22.32 of the County Zoning Ordinance. The proposed M-1 zoning designation would be adopted concurrently with the proposed Area Plan.

Response 4

The comment addresses the undeveloped land at 24314 The Old Road, Newhall, California. The comment does not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 5

The comment raises economic issues with regards to limitations of selling of the subject property that do not appear to relate to any physical effect on the environment. The comment will be included as part of

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 6

The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/2

TELEPHONE: (310) 314-8040
FACSIMILE: (310) 314-8050

CHATTEN-BROWN & CARSTENS
2601 OCEAN PARK BOULEVARD
SUITE 205
SANTA MONICA, CALIFORNIA 90405
www.cbcearthlaw.com

E-MAIL:
ACM@CBCEARTH.LAW.COM

November 23, 2010

Via Email and U.S. Mail

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Re: Proposed Changes to Designation of Sloan Canyon Road in One Valley One Vision Plan

Dear Mr. Glaser:

This firm represents Citizens for Castaic, a community group dedicated to the sensible development for the community of Castaic and protection of its equestrian lifestyle. Citizens for Castaic strongly opposes the proposed removal of Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway.

The area around Sloan Canyon Road is prone to wildfires and flooding, necessitating adequate emergency access. The continued designation of Sloan Canyon Road as a Limited Secondary Highway will help provide the required emergency access. The removal of the Limited Secondary Highway designation for Sloan Canyon would also remove Sloan Canyon Road from the Highway Plan and Bridge and Thoroughfare District, limiting the funds that could be used to improve emergency access along this road.

The retention of the Limited Secondary Highway designation is particularly important in light of a recent proposal to construct a new high school at a location to which Sloan Canyon Road could provide access. Sloan Canyon Road should remain designated as a Limited Secondary Highway to ensure there could be a safe route to the proposed school and adequate funding to provide that route in a timely manner.

1

2/2

Mitch Glaser
November 23, 2010
Page 2 of 2

Please feel free to contact me if you have any questions. Thank you for your time and consideration in this matter.

2

Sincerely,



Amy Minter

cc: Citizens for Castaic
Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich
Castaic Area Town Council
William S. Hart UHSD Governing Board

Letter No. D2

Letter from Chatten-Brown & Carstens, November 23, 2010

Response 1

The commenter states that Citizens for Castaic, a community group, opposes the proposed removal of the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway, as the route would help provide emergency access. The commenter also states that removal of this designation will remove Sloan Canyon Road from the Master Plan of Highways and Bridge and Thoroughfare District, limiting funds that could be used to improve emergency access along this road. Lastly, the commenter states that the retention of this designation could provide a safe route to a proposed high school in the area.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding emergency access and safe routes to school only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

Response 2

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

DON-E-BROOK FARMS
28680 San Francisquito Canyon Road
Saugus, California 91390

November 27, 2010

Dear Planning Commission,

As the owner of Don-e-brook Farms on San Francisquito Cyn. Rd., I am writing to inform you about the extreme negative impact the extension of McBean Parkway onto San Francisquito Cyn. Road would have on my business.

1

Our ranch is home to * Don-e-brook's riding school (100's of students)
(english, western, jumping, gymkhana)

*Public trail riding

*75 boarded horses

* 100 Lesson and trail ride horses

*ETI Corral # 77

2

*California Rangers Post 2 (4 troops)

*California Rangers Eagle troop
(currently Western states champion)

*Ride'n dine (trail ride and dinner)

*15 yrs. equestrian program for City
of Santa Clarita Parks and Rec.

Widening the road with an extension from McBean would increase traffic and traffic speed making it more difficult to cross safely on a horse or by foot. Reaching the county trails would be very dangerous.

3

Our water supply (well) is also on our property to the west side of the existing road. It would definitely impact our well.

4

Please leave San Francisquito Cyn. Rd. the pretty country road that it is for our safety and equestrian lifestyle in our canyon.

5

6

Sincerely,

Elizabeth Farinella - Ekeberg
Elizabeth Farinella - Ekeberg

Letter No. D3

Letter from Don-E-Brook Farms, November 27, 2010

Response 1

The comment only expresses the opinions of the commenter with regard to the extension of McBean Parkway onto San Francisquito Canyon Road would have on their business. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. However, it should be noted that County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

Response 2

The comment provides factual background information only concerning Don-E-Brook Farms and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

However, because the comment does not raise an environmental issue, no further response is required. Please see **Response 1**, above, regarding language that has been added to the Circulation Element in the proposed Area Plan.

Response 3

The comments states widening of McBean Parkway would increase traffic and create safety issues for horses and pedestrians. The comment addresses general subject areas, which received extensive analysis in the Revised Draft EIR. The comment does not raise any specific issue regarding that analysis and, therefore, no more specific response can be provided or is required. However, the comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. Please see **Response 1**, above, regarding language that has been added to the Circulation Element in the proposed Area Plan.

Response 4

The comment states that reaching County trails would be dangerous. Please see **Response 3** above, and also please see **Response 1**, above, regarding language that has been added to the Circulation Element in the proposed Area Plan.

Response 5

The comment states that widening of the road would impact their well. The comment provides factual background information only concerning Don-E-Brook Farms and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Please see **Response 1**, above, regarding language that has been added to the Circulation Element in the proposed Area Plan.

Response 6

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1/3

OVOV

From: Eddie Reinsma [reinsma@sbcglobal.net]
Sent: Saturday, November 27, 2010 7:06 AM
To: ovov
Subject: Fw: Road not needed or wanted

Eddie Reinsma
23093 Lowridge Place
Saugus, Ca 91390
661-297-2547
661-713-3089

11/27/10

Mr. Mitch Glaser,
Department of Regional Planning
320 W. Temple Street,
Los Angeles, Ca 90012

Dear Mr. Glaser: Re: OVOV – Highway Plan

As a resident off San Francisquito Canyon and Lowridge Place I wish to express my opposition to the proposed extension of Mc Bean from Copper Hill Drive to San Francisquito Canyon Road .

There are several reasons that I oppose this. First of all, it is not needed.

In 1995, when Copper Hill Drive was built, canyon residents were polled on where they wanted San Francisquito Canyon Road to join Copper Hill Drive. The decision was unanimous. We wanted the connection made where it now is. This was done, the temporary connection at Mc Bean during construction was removed, and traffic lights were installed at the current location.

We now find out that the extension of Mc Bean was put back into the highway plans for the County in 1996. There is no

need for this extension, and there are several reasons why it is a bad idea.

1. It is not wanted nor needed by the residents of the canyon that live on or near the canyon.
2. The traffic that commutes daily that runs up and down San Francisquito Canyon Road is already too heavy and needs to have a traffic study done, the speed they drive at is unsafe and this plan you have will only make it worse. San Francisquito Canyon is a very dangerous road the way it is now, you will make it even more unsafe than it is today and the speeds will go up by adding this connection.
3. It would connect onto San Francisquito Canyon Road in front of Don E Brook Farms, one of the largest horse boarding and training facilities in the Santa Clarita Valley, and home to California Rangers youth group. Don E Brook has heavily used arenas on both sides of the road. Traffic has to be stopped for horses and riders to cross. Cars would be traveling at a high rate of speed by the time they reached Don E Brook. This would create an unnecessary safety hazard to both equestrians and automobiles.
4. The San Francisquito Canyon Community Standards District is for a rural-equestrian area. Today San Francisquito Canyon Road makes an obvious visual transition from urban to rural. This two lane road winds down past horse ranches and bridle trails, giving the driver notice that this is not a road to speed on. Mc Bean connects to Copper Hill Road as a four lane, urban thoroughfare. Extending Mc Bean straight into the canyon completely disregards the spirit and purpose for the CSD.
5. With so many road improvements needed in Los Angeles County, this would be a total waste of money. It would be throwing money at a "need" that does not exist.
6. The land set aside for this road could be much more wisely utilized by enlarging a proposed equestrian trailhead and parking facility at Mc Bean and Copper Hill Road and including additional parking for persons wishing to access the Santa Clarita City multi-use trails. Currently there is no place for people wishing to get to these trails to park. This would allow pedestrians and bicycle riders to park and enter the City trails. It would also provide space for additional parking for horseback riders' trucks and trailers since this will be needed in the future as the Cliffie Stone Trail and other City/County trails are they are built out and connectivity is achieved throughout the area. In addition, there is probably room for a mini-park in this easement, which would serve the community too.

1

In the interest of protecting our rural CSD, safety, and fiscal responsibility, I hope the Regional Planning Commissioners will remove the extension of Mc Bean into San Francisquito Canyon from the Highway Plan.

Sincerely,

Eddie Reinsma

315

23093 Lowridge Place

Saugus, Ca 91390

Eddie Reinsma

R AND S AUTOMOTIVE

24773 Valley St

Newhall, Ca, 91321

661-254-4589

WWW.RANDSAUTOMOTIVE.COM

Letter No. D4

Letter from Eddie Reinsma, November 27, 2010

Response 1

The commenter states his opposition to the proposed extension of McBean from Copper Hill Drive to San Francisquito Canyon Road in that it is not wanted or needed by the residents of the canyon and that it would negatively impact the Don E Brook Farms equestrian facility. The commenter also states that San Francisquito Canyon Road is a heavily traveled road with unsafe traffic conditions and that the proposed extension of McBean Parkway will only make traffic conditions worse.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

OVOV

From: tom berman [thomasberman89@gmail.com]
Sent: Sunday, November 28, 2010 9:55 AM
To: ovox
Subject: OVOV Mc Bean Extension

As a rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; I am opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten riders' safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design I ask that this extension be removed from the planning process.

1

Thomas Berman

1826 N. Fairview St.
Burbank, CA 91505

Letter No. D5

Letter from Tom Berman, November 28, 2010

Response 1

The commenter expresses his opposition to the extension of McBean Parkway onto San Francisquito Canyon Road in that the proposed extension would direct traffic onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses, and vehicle occupants. The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

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The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/2

c/o Henry Urick
28631 Sloan Canyon Rd.
Castaic, CA 91384
(661) 257-2222 henryu@earthlink.net

November 29, 2010

Mr. Mitch Glaser
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Dear Mitch:

I appreciate your meeting with Rusty Russell and myself today. As discussed, we request a change in zoning from A2-2 to H2 for the property in TTM 67278 consisting of the following properties:

- 2865-018-033 40 acres Allen B. & Mary S. Russell Jr.
- 2865-018-034 40 acres Henry G. Urick & Linda Clements
- 2865-023-006 10 acres Karen Allard
- 2865-023-007 10 acres Astonisas Trust – Dan Haratunian*

- Owner interested in joining us with property located directly adjacent to our map and the urban zone.

1

These properties encompass approximately 100 acres straddling an unimproved section of Sloan Canyon Road in Castaic one mile West of the I-5 Freeway. The following factors indicate consideration for H-2 zoning:

- The recent decision by Hart School District to locate the future Castaic High School less than one mile west of our properties. Access is exclusively via Sloan Canyon Road past our property. The Hart District made this decision recently and is very timely.
- The Castaic School District has purchased land to build an elementary school adjacent to the Southwest corner of our property.
- Our properties comprise the developable area closest to the core of Castaic, providing central access to both the community core and proposed elementary and high schools sites.
- The Southern property line is directly adjacent to U2/H2 zoning. The Eastern property line is less than 700 feet to U2/H2 zoning.
- Affordable single family residential housing is the highest and best to serve the demographic of school age families for the future development of the Castaic community.

Page 2
Mr. Mitch Glaser
November 29, 2010

We request that staff recommend an urban designation for the above properties in the OVOV Plan and Zone Amendment equal to the U2/H2 designation of the adjacent urban zone. We appreciate staff's consideration in this matter.

This request is being made as a timely response decision by the Hart School District which is changing the land use issues of the Castaic area. As land owners, we are compelled to respond to these changes within a timely manner as it relates to OVOV.

1

As discussed, we will be working to receive the approval of our neighboring property owners as well as approval from the Castaic Town Council.

Sincerely,

Henry Urick, 28631 Sloan Canyon Road, Castaic, CA 91384
2865-018-34

Allen B. Russell Jr.; 28711 Sloan Canyon, Castaic, CA 91384
2865-018-33

Karen Allard / Karen Allard Trust; 28701 Sloan Canyon Road, Castaic, CA 91384
2865-023-06

- cc: Wayne Rew, Chair, Regional Planning Commission
- cc: Richard J. Bruckner, Director, Department of Regional Planning
- cc: Mr. Paul Novak, Planning Deputy, Office of Michael D. Antonovich

Letter No. D6

Letter from Henry Urick, November 29, 2010

Response 1

The commenter requests a zone change from A2-2 to H2 for the property in Tentative Tract Map 67278, consisting of four parcels. The commenter lists several factors to support consideration of his request.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/4

ANDEL ENGINEERING COMPANY

23655 San Fernando Road, Suite B, Newhall, CA 91321

Tel: (661) 259-1920

Mailing Address: P.O. Box 220428, Newhall, CA 91322-0428

Fax: (661) 259-0511

November 29, 2010

Mr. Richard J. Bruckner, Director
Los Angeles County
Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Attn: Mitch Glaser, Planner

Re: J.N. 5168, Howell
Sloan Canyon Road
One Valley One Vision

Dear Sir:

My client, Mr. & Mrs. Howell, own 12.74 acres of land fronting on Sloan Canyon Road. The current General Plan designation for their property is N2 and HM. Your map of current designations shows N1 and HM.

Your proposed plan for this land is RL5, which limits the Howell's to the existing lots that they own. The purpose for buying and owning this property is for investment, to build a hedge against inflation and cost of living increases as one plans for their survival. To deny my client this right and privilege in a democratic, capitalistic country is unfair, illogical and unreasonable. If you reclassify the use of their property with a broad, indiscriminate brush, you have instantly reduced the value of their investment. Why would anyone want to do that, except for use of power over a neighbor? Use of such power cannot be classified as amicable, but detrimental.

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The subject property is within an area proposed as RL5 that is a peninsula jutting into proposed RL2 and essentially joining to dense multiple units per acre of existing residential.

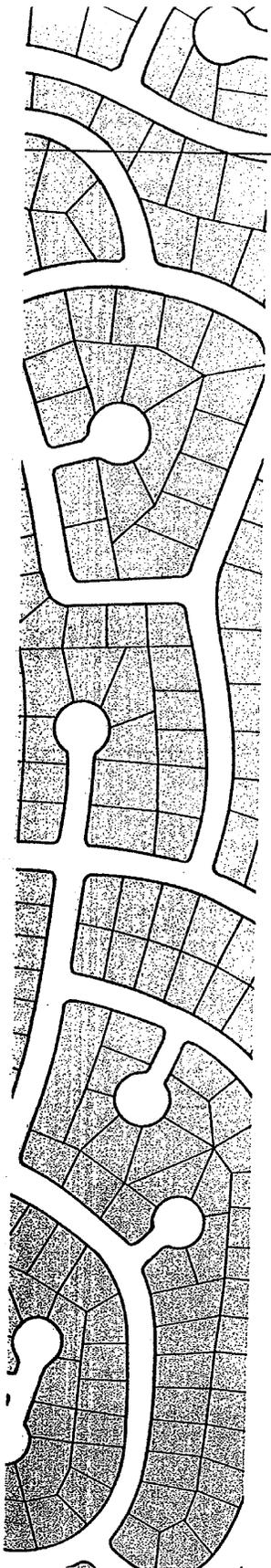
I am arguing that your RL5 limits should not arbitrarily jut into the RL2 and leave isolated pockets of RL2 in the RL5 area. Logic for me would surround the school and City lots with a band of RL2 and then a band of RL5. Your plan has spots of RL2 inside the RL5. It has been my experience that the Los Angeles County Regional Planning Commission has always frowned upon spot zoning.

I am suggesting that the boundary between the RL2 and RL5 should look like the Map 2 suggestion where the RL5 line is moved westerly. The Map 1 is the proposal per your plan.

If you do this, you avoid the jump from high-density and one-acre existing

CIVIL ENGINEERING and SURVEYING

"Happiness is a Satisfied Client"



2/4

Mr. Richard J. Bruckner, Director, Los Angeles County
Department of Regional Planning
J.N. 5168, Howell, Sloan Canyon Road, One Valley One Vision

November 29, 2010

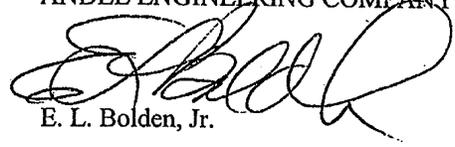
properties to RL5. You would have high-density and one-acre existing adjacent to RL2, then from a band of RL2 you would move to RL5.

Further, this would eliminate the spot zoning of RL2 surrounded by RL5. Important to my client, whose property is near the one-acre and high-density residential property, the classification on their property would be RL2.

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Sincerely,

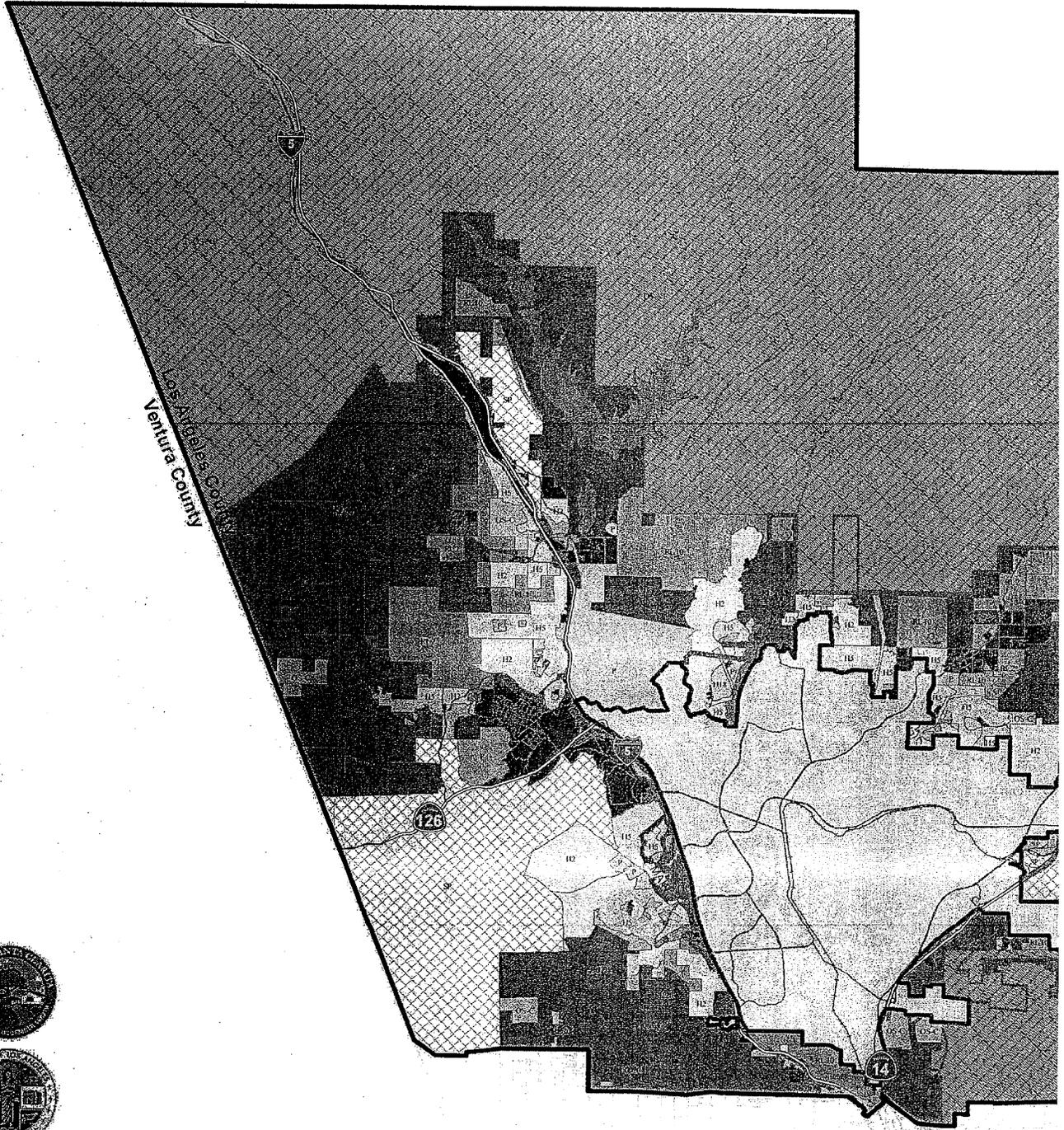
ANDEL ENGINEERING COMPANY



E. L. Bolden, Jr.

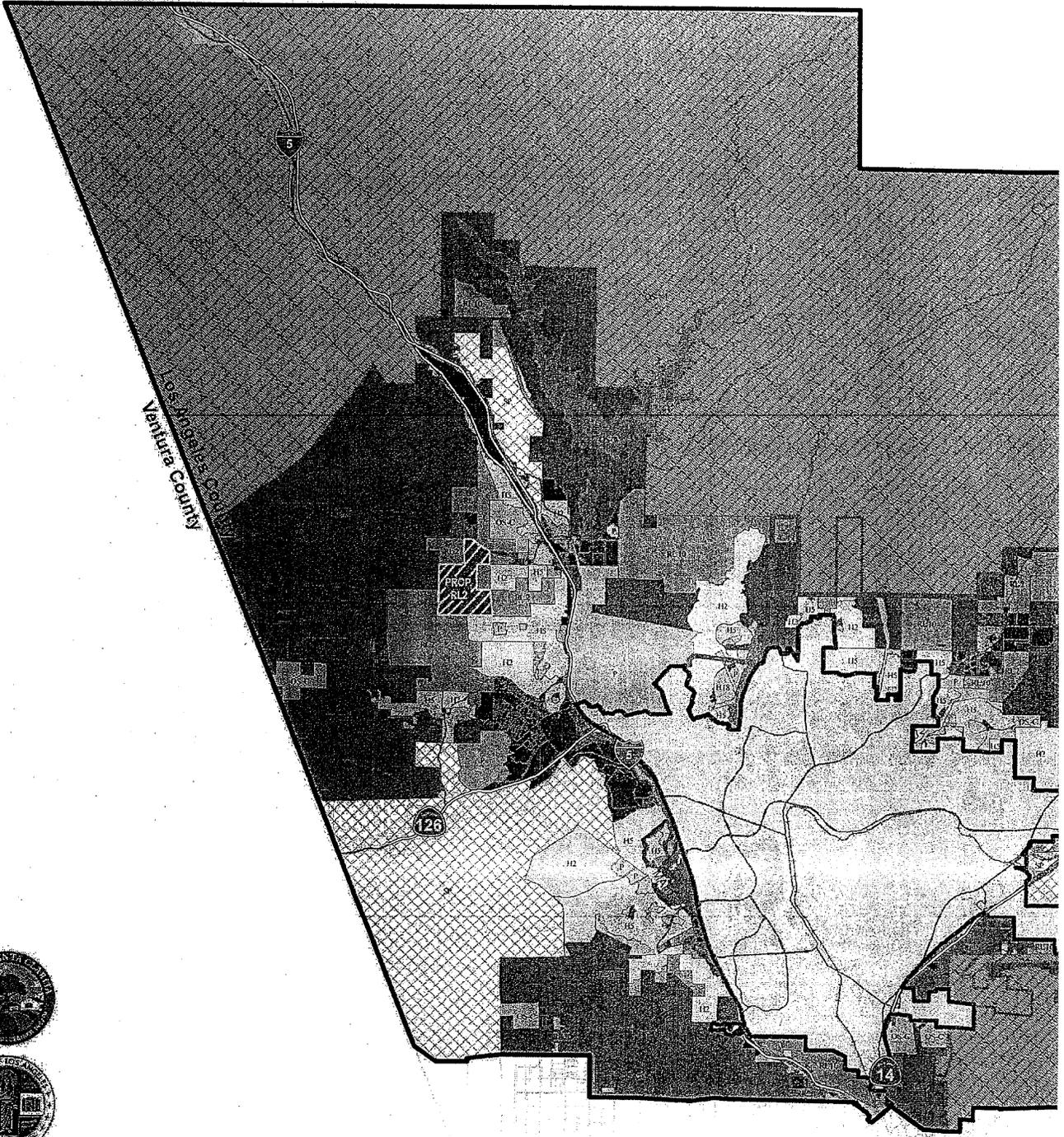
ELB/me

ANDEL Engineering Company, Civil Engineers & Land Surveying
P.O. Box 220428, Newhall, CA 91322-0428



al Plan - August 2009

Map 1



at Plan - August 2009

Map 2

Letter No. D7

Letter from Andel Engineering Company, November 29, 2010

Response 1

The commenter expresses the opinion that the 12.74 acres of land fronting Sloan Canyon Road owned by his clients should not be proposed to be designated as Rural Land 5 (RL5), and that this proposed land use designation would reduce their property value. The commenter requests a designation of Rural Land 2 (RL2) instead of RL5.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comment regarding reduced property value only expresses the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

Glaser, Mitch

From: melissa kimberly [melissa.kimberly@gmail.com]
Sent: Monday, November 29, 2010 5:48 PM
To: Glaser, Mitch
Cc: Diana Larios
Subject: Please Help Keep Sloan Canyon Rural

Dear Mr. Glaser,

I am a Castaic resident, living off of Hillcrest Pkwy, very close to Sloan Canyon Road. I agree with the County's proposed changes to the Master Plan of Highways that would remove the "limited secondary highway" designation from Sloan Canyon Road. The rural canyons of Castaic are priceless and should be protected, not made in to major highways for new development.

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Sloan Canyon and the hills surrounding it is a thoroughfare for wild animals natural to the area including, Coyotes, Mountain Lions, Bobcats and Deer to name a few, but a busy "highway" will endanger those animals environment. The highway would be an even higher risk of fire to an area that is already overgrown with fuel perfect for fire as it is.

Please help keep our area natural and rural.

Thank you,

Melissa Kimberly-Blair
30425 Cartagena Place
Castaic, CA 91384

Letter No. D8

Letter from Melissa Kimberly, November 29, 2010

Response 1

The commenter states that she is in agreement with the proposed Area Plan's change to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

OVOV

From: Eric Ekeberg [retiredafc@sbcglobal.net]
Sent: Monday, November 29, 2010 11:20 AM
To: ovov
Subject: Proposed Extension of Mc Bean Parkway North of Copper Hill Drive

We are petitioning the removal of the Mc Bean extension to San Francisquito Canyon Road as proposed by Los Angeles County Regional Planning and the One Valley One Vision Highway plan. The proposed extension would join San Francisquito at the old Farmer John lateral motorway intersection and negatively impacting our equestrian facility. This extension would destroy a key equestrian crossing, trail access, cotton wood grove (acting as a buffer between us and the Tesoro development) and imperil access to our water well. Increase traffic flow would endanger riders, horses, and vehicle occupants.

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Don-e-brook Farms (<http://donebrookfarms.com>) was established in the 1960's and it one of the few public riding facilities left in the Santa Clarita Valley. Our large riding school has taught three generations of riders the skills and enjoyment of horseback riding. Additionally, Don-e-brook Farms is home (since 1968) to the California Rangers (<http://www.californiarangers.org/>), a large non-profit youth equestrian drill team established in 1944.

Your input and assistance would greatly be appreciated!

Eric E Ekeberg (LACoFD retired)
Don-e-brook Farms
28680-28710 San Francisquito Canyon Road
Santa Clarita, CA 91390
661-297-7669
Fax: 661-297-7025

Letter No. D9

Letter from Eric Eckeberg, November 29, 2010

Response 1

The commenter petitions for the removal of the McBean extension to San Francisquito Canyon Road as proposed by the Los Angeles County Regional Planning and the proposed Area Plan's Master Plan of Highways. The commenter states that the proposed extension would have a negative impact on his equestrian facility and would endanger riders, horses, and vehicle occupants through the increase in traffic flow.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

Glaser, Mitch

From: Kathy Henry [dkhenry@sbcglobal.net]
Sent: Tuesday, November 30, 2010 6:57 PM
To: Glaser, Mitch
Subject: Re: Sloan Canyon Road

Dear Mr. Glaser,

I am a Castaic resident, close to Sloan Canyon Road. Sloan Canyon Road is hidden in a beautiful canyon full of working ranches and farm animals; it is a gem in our community. I agree with the County's proposed changes to the Master Plan of Highways that would **remove** the "limited secondary highway" designation from Sloan Canyon Road so that it would be just a "local street". The rural canyons of Castaic are priceless and should be protected, not made in to major highways. Please help us to keep our rural canyons rural.

1

We thank you and appreciate your support!

2

Respectfully submitted,

Daniel & Kathleen Henry

31508 Karena Ave

Castaic, CA. 91384

Letter No. D10

Letter from Kathy Henry, November 30, 2010

Response 1

The commenter states that she is in agreement with the County's proposed changes to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road so that it would be just a "local street."

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 2

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1 / 1

OVOV

From: equestrianevents@aol.com
Sent: Tuesday, November 30, 2010 1:23 PM
To: ovov
Subject: trouble brewing on McBean Parkway, Copper Hill, San Francisquito, Calex Dr

This is a very unsafe idea. Please don't encourage faster traffic to injure horses and riders.

The County of Los Angeles and the City of Santa Clarita have proposed to extend Mc Bean Parkway, North of Copper Hill drive. The route is directly behind Calex Drive (North Park tract) intersecting San Francisquito Canyon Road at the old Farmer John entrance. This route would destroy the Don-e-brook equestrian crossing, removing the Cotton Wood tree grove that acts as a buffer between the ranch and the canyon. Additionally, it imperils our well access, the new arena, etc. The detrimental effect on property values in the North Park tract could be significant.

Mr. Mitch Glasser Attn: OVOV
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road One Valley One Vision

1

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Clifffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

The ETI magazine can be found online http://www.etinational.com/eti_magazine/

Please forward and share these messages. If you'd like to be removed from this list please let me know.

All ETI events require a Waiver and Release. Non members also need to sign the Single Event Form and Pay \$5.00.

Kimberly Dwight www.PalmdaleBoarding.com

Just promoting equestrian events in So California.

http://www.etinational.com/eti_magazine/

Letter No. D11

Letter from Etinational, November 30, 2010

Response 1

The commenter raises concerns about the proposed extension of McBean Parkway north of Copper Hill Drive. The commenter states that this route would destroy the Don-e-Brook equestrian crossing, imperil his well access, and have a significant detrimental effect on property values in the North Park tract.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

OVOV

From: jdwright@aol.com
Sent: Tuesday, November 30, 2010 10:33 AM
To: oyov@planning.lacounty.gov; ovov
Subject: don't extend McBeak Parkway

Please don't infringe on the equestrian lifestyle. We're being squeezed out everywhere. Hikers may not have a problem with cars racing along the road but horses will.
Kimberly Dwight www.PalmdaleBoarding.com
Equestrian Trails, Inc. www.ETInational.com editor ETI-magazine@ETInational.com ETI Magazine http://www.etinational.com/eti_magazine/
We have a new ETI Corral 138 the Barrel Springs Riders in the Antelope Valley www.Eti138.com is our web site. We also communicate through <http://groups.yahoo.com/group/barrelspringsriders/>

Send letters and petitions to:
Mr. Mitch Glasser Attn: OVOV
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

1

Letter No. D12

Letter from Kimberly Dwight, November 30, 2010

Response 1

The commenter expresses her opposition to the extension of McBean Parkway onto San Francisquito Canyon Road in that this extension would increase traffic on San Francisquito Canyon Road and infringe on equestrian lifestyle for those utilizing this road as a crossing route.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/3

November 30, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Dear Mr. Mitch Glaser,

This letter is in regards to Los Angeles Planning Commission plan to change the property usage known as **One Valley One Vision (OVOV)** in the Sloan Canyon area of Castaic, California. This plan will change the property usage from one (1) house per two (2) acres to one (1) house per five acres. Since our property is in this area, this change will lower the chance for us to sell our property.

Our family donated the easement for Mandolin Canyon Road to go through our property to help us develop our land and open Castaic to neighboring properties, and will now be built due to the new Castaic High School site being chosen on Romero Canyon site.

We also think the secondary school road should be on Sloan Canyon Road instead of Romero Canyon Road with a locked gate.

The property north of us under OVOV will be RL1. Other properties directly around us on all sides are RL2. Without Mandolin Canyon Road this could not have been possible. The chosen school site is in this area and would use Mandolin Canyon Road for access. We feel it is unfair that the county can use our property for a road, but we can not use it to develop it under the new RL 5 OVOV Plan.

Under this new plan it will be difficult to develop and sell our property. At the Castaic Town Council meeting, September 17, 2009, they agreed in favor of their current CSD Plan which is 1 house per 2 acres, and agrees that the change to RL5 is unfair to our family and several of our neighbors. Why would the County of Los Angeles take this upon themselves to ruin our plans and dreams for our property?

In addition, Sloan Canyon Road, which is currently designated as a limited secondary highway from Parker Canyon Road which provides a loop road for better emergency response and traffic flow in the area, is also being changed. The new OVOV Plan terminates the highway designation at Hillcrest and then re-designates it to a rural road. This really does not make good planning sense and provides much less safety and security to the residents and the new school.

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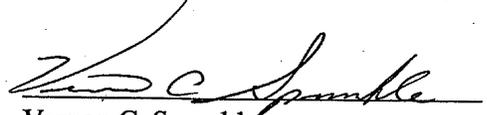
NOV 30 2010

Enclosed is a map of the proposed OVOV Plan that shows that our property is designated for RL5 (marked in red) but is surrounded by RL1 and RL2 properties. We feel this is unfair and would appreciate your attention to this matter.

1

Thank you for your time, We hope you can help us with this matter.

2


Vernon C. Sprankle

The Sprankle Family
(80 acres) Map Book 3247, Page 026, Parcels 055 and 056
Vernon C. Sprankle
Frances J. Sprankle
Norman H. Sprankle
Helen E. Sprankle Gubrud

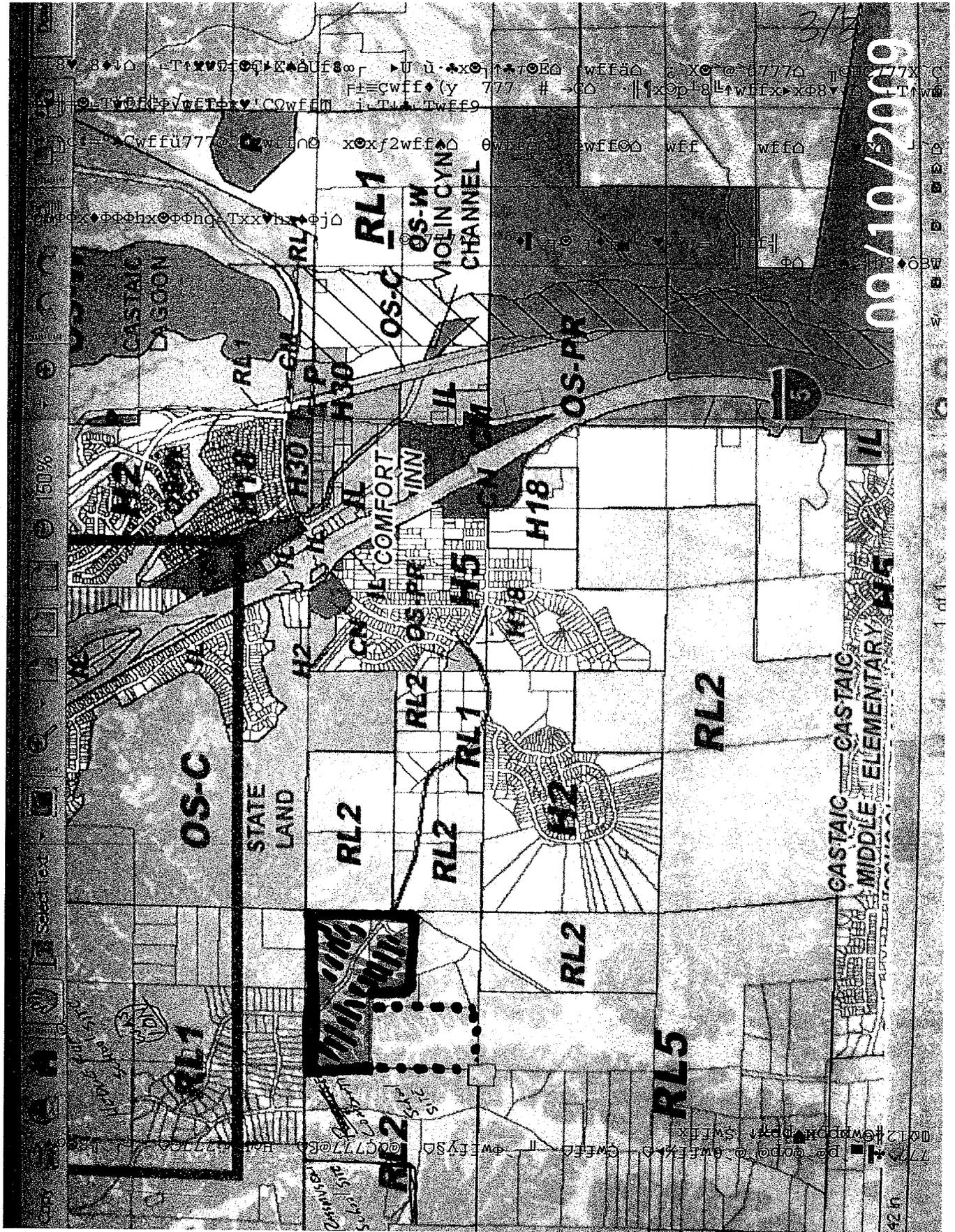
Contact Information:
Vernon C. Sprankle
28393 Borgona
Mission Viejo, CA 92692
Home Phone #: (949)457-9112
Cell Phone #: (714)501-8711
E-Mail: vcsperformance@gmail.com

c: Supervisor, Michael D. Antonovich
County of Los Angeles
500 West Temple Street
Los Angeles, CA 90012

Pat Modungno, Planning Commissioner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Paul Novak, Planning Deputy
County of Los Angeles
500 West Temple Street, Room 869
Los Angeles, CA 90012

Rosalind Wayman, Senior Deputy
County of Los Angeles District Office
23920 Valencia Blvd., Suite 265
Santa Clarita, CA 91355



3/15
6/10/2009

Letter No. D13

Letter from Vernon C. Sprankle, November 30, 2010

Response 1

The commenter states that the proposed Area Plan's Rural Land 5 (RL5) land use designation for his property will make it difficult for him to develop and sell it.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comment regarding difficulty to develop and sell the property only expresses the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also expresses concern about the proposed removal of the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway in that it does not make good planning sense and would provide much less safety and security to the residents and to the proposed high school in the area.

The comment raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding good planning sense and safety and security only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

Response 2

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1/1

Glaser, Mitch

From: Susan Rauch [susanfyr@yahoo.com]
Sent: Tuesday, November 30, 2010 12:27 PM
To: Glaser, Mitch
Subject: Castaic, Sloan Canyon Road

Dear Mr. Glaser,

I am a resident on Sloan Canyon Road in Castaic and I am IN FAVOR OF DOWNGRADING SLOAN CANYON ROAD to a local street and removing it from the Master Plan of Highways.

1

I am aware that at the Sept. 23rd IEC hearing on the One Valley One Vision Master Plan Of Highways proposed changes, that the County was in support of removing the "Limited Secondary Highway" designation from Sloan Canyon Road, as were many of my neighbors that also attended. I understand that the IEC's decision regarding their recommendation was "postponed" because there were several people that opposed the removal of Sloan from the Master Plan of Highways. Please be advised that those most of those in opposition were not Castaic or Sloan Canyon residents and neighbors, they were developers concerned with the B&T fees and future development in our rural community.

2

3

Many community members attending the September Castaic Area Town Council meeting and were able to get clarification on the CATC standing regarding Sloan Canyon. The CATC wrote a letter that shows that they are in agreement with the residents on Sloan Canyon Road. The letter states that Sloan Canyon Road SHOULD BE DOWNGRADED TO A LOCAL STREET. The requested amendment is only for the very north end of Sloan Canyon Road.

4

Sincerely,

Susan Rauch

30470 Sloan Canyon Rd.

Castaic, CA 91384

Letter No. D14

Letter from Susan Rauch, November 30, 2010

Response 1

The commenter states that she is in favor of downgrading Sloan Canyon Road to a local roadway and removing from the Master Plan of Highways. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 2

The commenter states that, after observing a discussion at a meeting of the County's Interdepartmental Engineering Committee (IEC) on September 23, 2010, the commenter believes that County staff was in support of removing the "Limited Secondary Highway" designation from Sloan Canyon Road. The comment provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 3

The comment addresses the postponement of the IEC's recommendation regarding Sloan Canyon Road and states that those in opposition to the removal of Sloan Canyon Road from the Master Plan of Highways were not residents from Castaic or Sloan Canyon but were developers concerned with B&T fees and future development. The commenter raises economic, social or political issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 4

The commenter notes that the Castaic Area Town Council is in support of downgrading Sloan Canyon Road to a local street. The commenter raises economic, social or political issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

November 30, 2010

DEC 6 2010

Mr. Mitch Glaser
Attn: OVOV
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

RE: Concerns on extending McBean Parkway north of Copperhill, Santa Clarita Valley

Dear Mr. Glaser,

I'm writing to share my concerns with you about the impending plan to extend McBean Parkway north of Copperhill. This extension would feed a potentially heavier volume and faster flow of traffic onto the existing San Francisquito Canyon Road where it would connect just south of Don E Brook Farms.

As an equestrian, my daughter, my friends, and I often cross San Francisquito on horseback to use the trails in the wash area and surrounding hills. Traffic is already a concern for us who frequently cross this street. We have a crosswalk, but 9.5 out of 10 drivers do not slow or even stop for us when we are in the crosswalk. This is dangerous to us, our horses, and these drivers. In fact, there have been car versus horse collisions in this crosswalk previously injuring the horse, vehicle driver, and damaging the car. It is already a hazardous situation and extending McBean will only add to this dangerous road.

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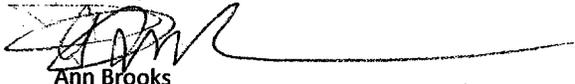
I would like to ask that you remove the proposed extension of McBean Parkway north of Copperhill for the mere concern of safety. Without having any measures proposed in regards to how to make our crosswalk on San Francisquito safer, there should be no discussion of changing the traffic pattern to endanger our horses, riders, and citizens using this stretch of the road.

I appreciate your time in hearing my concerns and sincerely hope that you will consider my objection a valid point for removal of this proposal.

I have enclosed petitions signed by concerned citizens from the Santa Clarita Valley.

Thank you, again.

Sincerely,



Ann Brooks
23907 Brio Court
Santa Clarita, CA 91354
dnabrooks@ca.rr.com

enclosures: signed petitions

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. Ann Brooks 23907 Brio Ct, Santa Clarita CA [Signature] 12/2/10
NAME ADDRESS SIGNATURE DATE

2. NICOLE BROOKS 23907 Brio Ct, Santa Clarita CA [Signature] 12/2/10
NAME ADDRESS SIGNATURE DATE

3. Katie Moore 22556 Seaver Ct, Saugus 91350 K Moore 12/2/10
NAME ADDRESS SIGNATURE DATE

4. Marilyn E. Moore 25424 Stratford Dr, Saugus, CA M Moore 12/2/10
NAME ADDRESS SIGNATURE DATE

5. Melanie Moore 28982 Grand Canyon Melanie Moore
NAME ADDRESS SIGNATURE DATE

6. Brooks Mini 31160 Romeo Ln [Signature] 12/2/10
NAME ADDRESS SIGNATURE DATE

7. Lisa McKeown 27041 Sedona [Signature] 12/2/10
NAME ADDRESS SIGNATURE DATE

8. _____
NAME ADDRESS SIGNATURE DATE

Letter No. D15

Letter from Ann Brooks, November 30, 2010

Response 1

The commenter expresses her concerns about the extension of McBean Parkway onto San Francisquito Canyon Road. The commenter states that this extension would pose a safety hazard in that it would feed a potentially heavier volume and faster flow of traffic onto the existing San Francisquito Canyon Road which is used by equestrians to cross over to the trails in the wash area and surrounding hills.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

Glaser, Mitch

From: Elizabeth LANTZY [mooncall@sbcglobal.net]
Sent: Tuesday, November 30, 2010 8:08 AM
To: Glaser, Mitch
Cc: Rosalind Wayman; ovov; PNovak@lacobos.org; Tae, Susan; Cordova, Ramon; Rosalind Wayman; Miguel Larios
Subject: One Valley - One Vision Meeting 12/6/2010

At the Castaic Area Town Council meeting following your last IEC meeting it came to light that the CATC had actually sent a letter in favor of removing Sloan Canyon Rd north of Hillcrest Pkwy from the master plan of highways and removing the 'limited secondary highway' designation. At the IEC meeting it seemed as if the moderators understood that the Town Council felt differently.

Since that meeting the Town Council has resent their original letter and I hope that that has clarified their position. A map accompanied the letter highlighting the section of Sloan Canyon Rd that is in question.

My wife and I have lived here on Sloan Canyon Rd for 9 years now having moved out from the city life. We have developed a deeper understanding and appreciation for the working ranches and the Ranchers and Cowboys that run them. The original 1908 home of the Sloan family still stands on Sloan Canyon Rd and is again a working ranch amongst 10 along this 2 or 3 mile stretch of the road. It is a reflection of a heritage of the area that could never be replaced if it were decimated by the construction of an unnecessary highway.

The access problems that we had encountered during the rainy winter seasons have been eliminated through the cooperation of the Supervisor's office, the folks that live here and a little ribbon of asphalt. The only benefit in putting in a highway would be for the mass development and the ruin it would bring to this area.

I urge all of you that are involved in the OV-OV planning to take some time and visit the ranches here on Sloan Canyon Rd. Meet the Ranchers that own them. Get a feel for the history and heritage here. Then look at the plan and see, as we do, that there is really no need for a highway through here.

Bud & Liz Lantzy
30801 Sloan Canyon Rd
Castaic, CA 91384
661 775-9409

1

Letter No. D16

Letter from Bud and Liz Lantzy, November 30, 2010

Response 1

The commenters agree with the Castaic Area Town Council in its support of removing Sloan Canyon Road north of Hillcrest Parkway from the Master Plan of Highways and removing the Limited Secondary Highway designation. The commenters state that the 2- or 3-mile stretch of Sloan Canyon Road north of Hillcrest Parkway is rich in history and reflective of ranches and the ranchers that work there.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

OVOV

From: Art Carvalho [acarvalho@lhcllp.com]
Sent: Wednesday, December 01, 2010 10:59 AM
To: ovox
Subject: FW: Extension of McBean Parkway onto San Francisquito Cyn Road; One Valley One Vision

Mr. Mitch Glasser Attn: OVOV
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road; One Valley One Vision

As a resident of the County of Los Angeles, a small business owner and an equestrian, I urge the County of Los Angeles to abandon the consideration and implementation of the extension of McBean Parkway onto San Francisquito Canyon Road.

This community worked for three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horse keeping and trails on the approved SunCal Project in the canyon and also four new horse keeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

Spearheaded by ETI members, equestrians are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

Arthur Carvalho, Jr.
Lang, Hanigan & Carvalho, LLP
21550 Oxnard Street, Suite 760
Woodland Hills, CA 91367
Tel: 818-883-5644 | Fax: 818-704-9372
acarvalho@lhcllp.com

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Letter No. D17

Letter from Art Carvalho, December 1, 2010

Response 1

The commenter opposes the extension of the McBean Parkway onto San Francisquito Canyon Road, and states that this extension will only increase the speed of vehicles, deny safe crossing without signals, and defeats the purpose of the community standards that the community worked for three years to acquire. The commenter urges the County to deny this extension for the safety of all the ranches and horseback riders.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

Glaser, Mitch

From: Michael Davis [mdavdavis@sbcglobal.net]
Sent: Wednesday, December 01, 2010 1:04 PM
To: Glaser, Mitch
Subject: Keeping Castaic Rural

Dear Mr. Glaser,

I am a Castaic resident, close to Sloan Canyon Road. Sloan Canyon Road is hidden in a beautiful canyon full of working ranches and farm animals; it is a gem in our community. I agree with the County's proposed changes to the Master Plan of Highways that would remove the "limited secondary highway" designation from Sloan Canyon Road so that it would be just a "local street". The rural canyons of Castaic are priceless and should be protected, not made in to major highways. Please help us to keep our rural canyons rural.

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Thank you,

Denyse Davis

31611 Hipshot Dr

Castaic CA 91384

Letter No. D18

Letter from Michael Davis, December 1, 2010

Response 1

The commenter states that he is in agreement with the proposed Area Plan's change to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road so that it would be just a "local street."

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

Glaser, Mitch

From: J. A. Thomas, Inc./Julie Thomas [jathomasinc@earthlink.net]
Sent: Wednesday, December 01, 2010 6:37 PM
To: Glaser, Mitch
Subject: Proposed changes to designation of Sloan Canyon Road in the One Valley One Vision Plan

December 1, 2010

**Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles**

VIA: E-mail: mglaser@planning.lacounty.gov

Re: Proposed changes to designation of Sloan Canyon Road in the One Valley One Vision Plan

Mr. Glaser:

I will be unable to attend the meeting on December 6th. We have lived on Sloan Canyon Road just south of Hillcrest Parkway for 30 years. We are in favor of removing the "limited secondary highway" designation from Sloan Canyon Road. I feel strongly that Sloan Canyon south of Hillcrest Parkway to Hasley Canyon Road also should be included in the removal of the designation. This section is only 9/10 of a mile with many equestrian ranches along it.

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Thank you,

**Julie A. Thomas
30521 Sloan Canyon Road
Castaic, CA 91384
661-257-6111**

Letter No. D19

Letter from J.A. and Julie Thomas, December 1, 2010

Response 1

The commenter states that she is in agreement with the proposed Area Plan's change to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter states that she is also in favor of removing the Limited Secondary Highway designation from Sloan Canyon Road south of Hillcrest Parkway to Hasley Canyon Road, as it is only a 9/10 of a mile stretch that contains many equestrian ranches.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

Judy Reinsma
29750 San Francisquito Canyon Rd.
Saugus, CA 91390

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Dear Mr. Glaser: Re: H2 Land Use Category- Tesoro del Valle lands

On the Land Use Policy Map for OVOV, it appears as if the Northern portion of the Tesoro del Valle development is allowed an increase in density from A-2 zoning which now exists to the higher density H2 land use category.

The original approval for the Tesoro del Valle project allowed 122 dwelling units on Planning Area B for 595.5 gross acres of land and 115 dwelling units in Area C on 668.7 gross acres with a zone designation throughout of A-2. This would be a total of 237 dwelling units for the entire area, which is even larger than the H2 section shown on the map.

If this property is designated H2, as shown on the OVOV map, the number of homes allowed would be much higher than currently approved. This would grant the developer the right to build many homes in an area that is surrounded by land designated RL-20 to RL-5, basically punching a huge hole into the midst of the entire rural area, immediately adjacent to both the Castaic and San Francisquito Canyon rural Community Standards Districts, and within a few hundred feet of Angeles National Forest.

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The developer has already stated their plan to transfer density from the un-built highly urban southern section of the tract to this specific area. Incorporating this change from a rural A-2 zoning to the urban H-2 designation in OVOV would appear to facilitate the developer's plans. Any decision about this or any other development should be made by the Planning Commission after careful consideration and public hearings. Changing the approved land use designation on a specific development through OVOV is not good nor responsible planning.

I would like to request that the H-2 overlay for this entire area, which extends from the already built area of Tesoro del Valle directly North and is shown on the Land Use Policy Map in yellow be changed, and RL land use designation be put in its place.

2

Sincerely,

Judy Reinsma

Letter No. D20

Letter from Judy Reisma, December 1, 2010

Response 1

The commenter stated that it appeared that the northern portion of the Tesoro del Valle property was being allowed an increase in density. The commenter stated that this change would facilitate the developer's request to transfer density within the Tesoro del Valle property site. The commenter stated that changes to the Tesoro del Valle development plans should be made by the Planning Commission.

The comment raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Nonetheless, it should be noted that the proposed Area Plan will be reviewed by the Planning Commission and the Board of Supervisors prior to adoption. Any subsequent changes to the Tesoro del Valle development plans will also be reviewed by the Planning Commission prior to approval.

Response 2

The commenter requests that the proposed Residential 2 (H2) land use designation within the northern portion of the Tesoro del Valle property be changed to a Rural Land (RL) land use designation.

The comment raises issues pertaining to the land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

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ovov

From: Brenda Ofiesh [BrendaO@standardarmament.com]
Sent: Wednesday, December 01, 2010 12:47 PM
To: ovov
Subject: Extension of McBean Parkway onto San Francisquito Cyn Road

Dear Planning Commission:

Subject: One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

Brenda Ofiesh
(c) 626 825-3165
16217 Warmuth Road
Canyon Country, CA 91387

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Letter No. D21

Letter from Brenda Ofiesh, December 1, 2010

Response 1

The commenter states that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots in San Francisquito Canyon. The commenter also states that Equestrian Trials, Inc. (ETI) members are active in the Santa Clarita Trails Advisory Committee and are currently working on the plans for a required trailhead at the location of McBean Parkway and Copper Hill Drive and that the area for this proposed trailhead is approximately 0.5 acre. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through

traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**)."

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

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OVOV

From: Jane Fleck [jfleck@socal.rr.com]
Sent: Wednesday, December 01, 2010 12:38 PM
To: ovov
Subject: OVOV -- Opposed to McBean Parkway Extension to San Francisquito Canyon

Mr. Mitch Glasser
Attn: OVOV
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

Jane Fleck

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Letter No. D22

Letter from Jane Fleck, December 1, 2010

Response 1

The commenter states that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots in San Francisquito Canyon. The commenter also states that Equestrian Trials, Inc. (ETI) members are active in the Santa Clarita Trails Advisory Committee and are currently working on the plans for a required trailhead at the location of McBean Parkway and Copper Hill Drive and that the area for this proposed trailhead is approximately 0.5 acre. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through

traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**)."

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

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OVOV

From: stephen citron [scitron@sbcglobal.net]
Sent: Wednesday, December 01, 2010 11:17 AM
To: ovox
Subject: Extension of McBean road

Mr. Mitch Glaser Attn: OVOV
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,
Stephen Citron

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Letter No. D23

Letter from Stephen Citron, December 1, 2010

Response 1

The commenter states that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots in San Francisquito Canyon. The commenter also states that Equestrian Trials, Inc. (ETI) members are active in the Santa Clarita Trails Advisory Committee and are currently working on the plans for a required trailhead at the location of McBean Parkway and Copper Hill Drive and that the area for this proposed trailhead is approximately 0.5 acre. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through

traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community’s concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

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Glaser, Mitch

From: HaveAHunchRanch@aol.com
Sent: Wednesday, December 01, 2010 8:44 PM
To: Glaser, Mitch
Subject: San Francisquito Road Extension

Dear Mr. Glaser,

I am joining residents of San Francisquito Canyon in their opposition to the extension of Mc Bean Parkway onto San Francisquito Canyon Road as proposed by the One Valley One Vision Highway plans

Other than being chalked up for bragging rights as new road construction, the McBean Parkway extension to offer no real benefit to the San Francisquito canyon community. The extension would jeopardize the rural nature of this canyon, already undermined by growing traffic using San Francisquito as a major artery over the ridge to Green Valley, Leona Valley and Palmdale. Although protected by local Community Preservation Standards, the bucolic nature of the community would still be threatened. This road extension does not fall into the category of smart planning.

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In the interest of public safety as well as good rural street design, I am requesting that this extension be removed from the planning process.

Thank you for your consideration,

Linda Tarnoff

Letter No. D24

Letter from Linda Tarnoff, December 1, 2010

Response 1

The commenter expresses her opposition to the extension of McBean Parkway onto San Francisquito Canyon Road as proposed in the Master Plan of Highways. The commenter states that this extension has no real benefits to the San Francisquito Canyon community and would jeopardize the rural nature of this canyon.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

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Glaser, Mitch

From: mike fairbanks [aubriefairbanks@sbcglobal.net]
Sent: Wednesday, December 01, 2010 7:11 PM
To: Glaser, Mitch
Subject: Sloan Canyon

Dear Mr. Glaser,

I am a Castaic resident, close to Sloan Canyon Road. Sloan Canyon Road is hidden in a beautiful canyon full of working ranches and farm animals; it is a gem in our community. I agree with the County's proposed changes to the Master Plan of Highways that would **remove** the "limited secondary highway" designation from Sloan Canyon Road so that it would be just a "local street". The rural canyons of Castaic are priceless and should be protected, not made in to major highways. Please help us to keep our rural canyons rural.

Thank you,
Aubrie Fairbanks

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Letter No. D25

Letter from Mike and Aubrie Fairbanks, December 1, 2010

Response 1

The commenters state that they are in agreement with the proposed Area Plan's change to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road so that it would be just a "local street."

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

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December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quatl Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.



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Thank you,

Respectfully,

Rob Baggaley
ROB BAGGALY

24103 RANCHO RD Castaic
Phone: 661-244-0824

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D26

Letter from Bob Baggaley, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

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December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

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Thank you,

Respectfully,

Ken Miller
Ken Miller
27865 Beacon St - Castaic
Phone: 661-755-8081

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D27

Letter from Ken Miller, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

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December 1, 2010

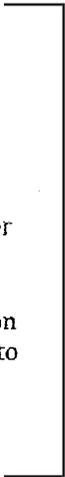
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.



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Thank you,

Respectfully,

Manette Metcalf

Manette Metcalf
30711 Romero Cyn
Castaic CA 91384
Phone: *661-702-0959*

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D28

Letter from Manette Metcalf, December 1, 2010

Response 1

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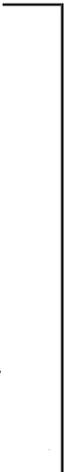
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

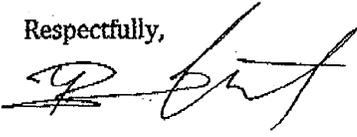
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1

Thank you,

Respectfully,


Brian Morace
30711 Romero Cyn Rd
CASTAIC CA 91384
Phone: (661) 257-8118

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D29

Letter from Brian Metcalf, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

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December 1, 2010

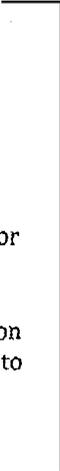
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.



1

Thank you,

Respectfully,

Marvin Metcalf
32711 Romero Cyn
Castaic, CA 91384
Phone: 661-702-0959

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D30

Letter from Marvin Metcalf, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

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1/1

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

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Thank you,

Respectfully,



John B. Rusconi
30705 Romero Cyn
Castaic Ca 91384
Phone: 661-294-3809

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D31

Letter from John B. Rusconi, December 1, 2010

Response 1

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December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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Thank you,

Respectfully,

Elisita Rayana
20705 Riverside Cyn
Castaic Ca 91311
Phone: 661 294-1207

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D32

Letter from Eloisite Boyaua, December 1, 2010

Response 1

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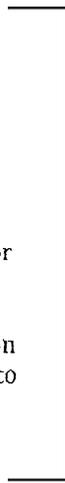
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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Thank you,

Respectfully,

Robert Cloyd
30112 Sharp Rd
Castaic, Ca 91384
Phone: 661-257-0311

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D33

Letter from Robert Cloyd, December 1, 2010

Response 1

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December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

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Thank you,

Respectfully,

Lynn Reber
30834 Romero Cyn Rd.
Castaic Ca. 91304
Phone: 323-206-8504

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D34

Letter from Lynn Reber, December 1, 2010

Response 1

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December 1, 2010

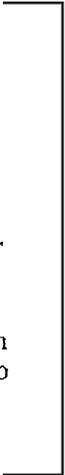
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

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Thank you,

Respectfully,

Matthew Thayer
28231 Springvale Lane
Castaic, CA 91384
Phone: 661 702 0733

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D35

Letter from Matthew Thayer, December 1, 2010

Response 1

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December 1, 2010

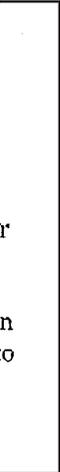
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OV0V

Dear Mr. Mitch Glaser,

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Thank you,

Respectfully,

Melissa Thayer
28231 Springvale Lane
Castaic, CA 91384
Phone: 661 702 0733

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D36

Letter from Melissa Thayer, December 1, 2010

Response 1

The commenter expresses her opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

1/1

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

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Thank you,

Respectfully,

Marielle C. Linnis

Mary Linnis
30717 Romero Canyon Rd
Castaic
Phone: *661-702-9686*

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D37

Letter from Marielle Ennis, December 1, 2010

Response 1

The commenter expresses her opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

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1/1

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OV0V

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

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1

Thank you,

Respectfully,

David J. [Signature]
27845/BEACON ST
CASTAIC, CA. 91384
Phone: 661-257-1668

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D38

Letter from Daniel Lopez, December 1, 2010

Response 1

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1/1

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

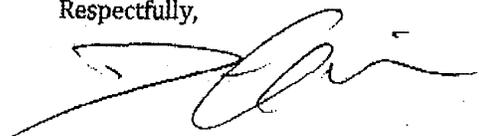
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1

Thank you,

Respectfully,



DAN GARCIA
27841 Beacon St
Castaic, CA 91384
Phone: 661-545-9464

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D39

Letter from Dan Garcia, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

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171

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

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Thank you,

Respectfully,

Alisa Flores
28691 Greenwood Pl
Castaic, CA 91384
Phone: 257-4035

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D40

Letter from Alisa Flores, December 1, 2010

Response 1

The commenter expresses her opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

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December 1, 2010

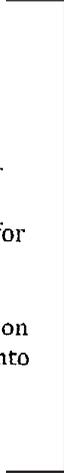
Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

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Thank you,

Respectfully,

PHILL FLORES
28691 GREENWOOD PL
CASTAIC, CA. 91384
Phone: 661-257-4035

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D41

Letter from Phill Flores, December 1, 2010

Response 1

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1/1

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

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Thank you,

Respectfully,

L. BAGGLEY
29103 Rangelwood Rd
Castaic CA 91384
Phone: 661-294-0824

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D42

Letter from L. Baggaley, December 1, 2010

Response 1

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December 1, 2010

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Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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Thank you,

Respectfully,

Debra Walker
DEBRA WALKER
27855 BEARON ST.
CASTAIC, CA 91384
Phone: 661-257-1510

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D43

Letter from Debra Walker, December 1, 2010

Response 1

The commenter expresses her opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

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December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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Thank you,

Respectfully,

Garrett Metcalf
20711 Romero
Castaic, CA 91384
Phone: 661-212-8117

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D44

Letter from Garnett Metcalf, December 1, 2010

Response 1

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December 1, 2010

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Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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Thank you,

Respectfully,

Erin Metcalf
Erin Metcalf
30711 Romero Can Rd.
Phone: (661) 212-8119

- cc: Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D45

Letter from Erin Metcalf, December 1, 2010

Response 1

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December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

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Thank you,

Respectfully,

Lynda Sue Brooks
29840 Beacon St
Castaic, Ca. 91384
Phone: *661-257-8935*

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D46

Letter from Lynda Sue Brooks, December 1, 2010

Response 1

The commenter expresses her opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

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December 1, 2010

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Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

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Thank you, 

Respectfully,

STEPHEN BROOKS
27840 BOACAW ST CASTAIC
91384 CA
Phone: 661 257-8935

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D47

Letter from Stephen Brooks, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

1/1

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

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I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

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Thank you,

Respectfully, *Loren Bess*

Loren Bess
30834 Romero Canyon Rd.
Castaic Ca. 91384
Phone: 661-510-7770

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Paul Novak, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D48

Letter from Loren Bess, December 1, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

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Date: December 1, 2010

To: Mr. Mitch Glaser
 Department of Regional Planning
 County of Los Angeles
 320 W. Temple Street
 Los Angeles, CA 90012

From: Norman H. Sprankle (wife Maureen)

Subject: Change in Present Land Usage

Location: Map Book 3247, Page 026, Parcel 055
 60 Acres Sloan Canyon

Property #: 3247-026-055

DEC 6 2010

Problem: The **One Valley One Vision (OVOV)** is unfair to our family and violates our property rights.

History: This parcel is part of 240 acres originally homesteaded by my great grandparents Isabel and James Walker. I, my brother Vern Sprankle and my sister Helen Sprankle Gubrud inherited this property as a shared parcel in 1987. Land use was residential/agriculture

Details: Currently the parcel is zoned for one (1) house per 2 acres. The OVOV plan alters this to one (1) house per 5 acres. Right-of-way agreements have been granted years ago at no cost to the county for a fire road and for the Mandolin Canyon Road, also at no cost. These agreements were made to assist our neighbors with fire safety and property development, and further to enhance our parcel for future development using the current zoning of one (1) house per two (2) acres. The new OVOV proposal map, that shows RL numbers summarizing land usage changes, displays RL-1 and RL-2 on all sides of our parcel (3247-026-055) yet our parcel is slated to become RL-5. The Castaic Town Council, on September 17, 2009 agreed with the fact that the change is unfair to us and it should follow the CSD Plan as one (1) house per 2 acres.

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In addition, Sloan Canyon Road, which is currently designated as a limited secondary highway from Parker Canyon Road, down to Hasley Canyon Road which provides a loop road for better emergency response and traffic flow in the area, is also being changed. The new OVOV Plan terminates the highway designation at Hillcrest and then re-designates it to a rural road. This really does not make good planning sense and provides much less safety and security to the residents.

Summary: Our family has demonstrated a willingness to work favorably with Los Angeles County and our Sloan Canyon neighbors regarding land use. Now the new OVOV plan threatens to greatly reduce our land use options and thus violates our property rights.

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Norman H. Sprankle 12-1-2010

Norman H. Sprankle
9450 SW Brant Street
South Beach, Oregon 97366
nmsprankle@charter.net
541-867-6780

c: Supervisor, Michael D. Antonovich
County of Los Angeles
500 West Temple Street
Los Angeles, CA 90012

Pat Modugno, Planning Commissioner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Mr. Paul Novak, Planning Deputy
County of Los Angeles
500 West Temple Street, Room 869
Los Angeles, CA 90012

Rosalind Wayman, Senior Deputy
County of Los Angeles District Office
23920 Valencia Blvd., Suite 265
Santa Clarita, CA 91355

Castaic Area Town Council
P.O. Box 325
Castaic, CA 91310

Letter No. D49

Letter from Norman H. Sprankle, December 1, 2010

Response 1

The commenter states that the proposed Area Plan is unfair to his family in that it would change the land use designation of his family's property to Rural Land 5 (RL5), which in the commenter's opinion would greatly reduce their land use options and would violate their property rights.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comments regarding unfairness, reduction of land use options, and violation of property rights only express the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also expresses concern about the proposed removal of the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway in that it does not make good planning sense and would provide much less safety and security to the residents.

The comment raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding good planning sense and safety and security only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

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Judy Reinsma, Chairman
San Francisquito Canyon Preservation Assn.
29750 San Francisquito Canyon Rd.
Saugus, CA 91390

December 1, 2010

Mr. Mitch Glaser
Department of Regional Planning
320 W. Temple Street.
Los Angeles, Ca 90012

Dear Mr. Glaser: Re: OVOV IEC Decision to Realign San Francisquito Cyn. Rd.

In October 1995 a meeting was held with residents of San Francisquito Canyon regarding keeping a temporary road into the canyon, which was used while Copper Hill Drive was being built, and abandoning the entrance which had been used for years. The temporary entrance was a straight road from the end of Mc Bean Parkway directly onto San Francisquito Canyon Road, a distance of less than half a mile. This was overwhelmingly vetoed by the residents. Subsequently, the temporary road was removed and traffic signals and signage were installed at the current intersection of San Francisquito Canyon Road and Copper Hill Drive.

It came to our attention, during the OVOV process, that the plan to realign San Francisquito Canyon so that it connects directly to Copper Hill Drive at Mc Bean Parkway was recommended by the IEC on June 19, 1997. Exactly why this action was taken, after thousands of dollars had been spent improving the current intersection, and canyon residents had overwhelmingly disapproved of such a connection, is hard to understand.

In 2009 San Francisquito Canyon was approved as a rural CSD, a designation we had all worked hard to achieve, and for which we are thankful to the Planning Commission and the Board of Supervisors. As a rural community, with many equestrian facilities as well as county trail access points crossing the road from Copper Hill up to the National Forest it is important that San Francisquito Canyon Road be seen by drivers as a country road, and not one on which excessive speed is encouraged.

The current road does just that, forcing drivers to slow down because it is not a straight shot, but a winding road descending into the canyon past ranches and multiple visual signs that emphasize the need for reduced speeds. A heavily traveled four lane road connecting to a two lane road aimed straight at the most highly used equestrian crossing

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in the canyon is an invitation to disaster. Such a road might be good urban planning but it is horrible rural planning, and this is a rural community.

Closing the existing canyon entry and extending McBean Parkway into the canyon will only lead to increased speeds and the probability of accidents involving pedestrians, horseback riders, and vehicles.

This is a "road to nowhere". It is not wanted, not needed, will increase speed on a rural road, and will cost money that could be much better used for necessary highway projects.

We urge the Planning Commission to remove the San Francisquito Canyon Road/McBean Parkway extension (secondary highway) from Copper Hill Drive to approximately 3,000 feet north of Copper Hill Drive from the highway plans for the County of Los Angeles.

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Sincerely,

Judy Reinsma
Chairman, San Francisquito Canyon Preservation Assn.

Letter No. D50

Letter from Judy Reinsma, December 1, 2010

Response 1

The commenter expresses her opposition to the proposed Area Plan's proposal to realign San Francisquito Canyon Road so that it connects directly to Copper Hill Drive at McBean Parkway in that it is a "road to nowhere" that is not wanted or needed. The commenter states that extending McBean Parkway into the canyon will only lead to increased speeds and the probability of accidents involving pedestrians, horseback riders, and vehicles.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

"The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, "healthy streets" would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**)."

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

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Glaser, Mitch

From: John Wolf [john.hotrod.wolf@sbcglobal.net]
Sent: Wednesday, December 01, 2010 9:12 AM
To: Glaser, Mitch; ovov
Subject: IEC Meeting Dec. 6th - Sloan Canyon Road

Dear Mr. Glaser,

I own a 10 acre ranch on Sloan Canyon Road I am very concerned about how the canyon is to be developed in the future. I am IN FAVOR of REMOVING the "Limited Secondary Highway Designation" . I would like to see Sloan Canyon Road as a "Local Street" in a rural community, just like it is now. The Castaic Area Town Council has written letters to the County confirming that it is the concensus of the community that Sloan Canyon remain rural and I hope that the County will honor that.

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Sincerely,

John R. Wolf

2/2

30730 Sloan Canyon Road
Castaic, CA 91384
661-295-5844

Letter No. D51

Letter from John R. Wolf, December 1, 2010

Response 1

The commenter states that he is in agreement with the proposed Area Plan's change to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road so that it would be just a "local street."

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

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DEAN PARADISE ENGINEERING
REGISTERED CIVIL ENGINEER LIC. 39830
29565 Baringer Rd
Castaic, CA 91384
661-803-2838

December 2, 2010

Via Email

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Re: Proposed Changes to Designation of Sloan Canyon Road in One Valley
One Vision Plan

Dear Mr. Glaser:

I am one of the three newly elected members of the Castaic Town Council that will be taking office in January. I oppose the removal of Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway. The Limited Secondary Highway designation should remain in place because several proposed projects would require significant increases in the use of Sloan Canyon Road, including a proposal for a new high school which has not been considered at this time. I do not believe the county should rush to make a change until a high school site is determined and traffic studies are completed. It is premature to make any changes at this time.

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Keeping the designation in place would ensure Bridge and Thoroughfare funds would be available for any improvements to Sloan Canyon Road these projects may require. While the previous Castaic Town Council did request the removal of this designation, I believe the new Town Council will likely revisit this issue in light of the impact of a high school in this area and may no longer support the removal of the designation, or at minimum postpone this change until all the facts are known.

Thank you for your consideration in this matter.

Sincerely,



Dean Paradise

Cc: Steve Burger – LA County Public Works

Letter No. D52

Letter from Dean Paradise Engineering, December 2, 2010

Response 1

The commenter identifies himself as a newly elected member of the Castaic Area Town Council and expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road north of Hillcrest Parkway. The commenter recommends retaining this designation because several proposed projects, including a new high school, would significantly increase the use of Sloan Canyon Road. The commenter states that retaining this designation would ensure that Bridge and Thoroughfare funds would be available for any improvements to Sloan Canyon Road that these projects may require.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment, as well as economic, social or political issues that do not appear to relate to any physical effect on the environment. The comment only expresses the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

The County of Los Angeles and the City of Santa Clarita have proposed to extend Mc Bean Parkway, North of Copper Hill drive. The route is directly behind Calix Drive (North Park tract) intersecting San Francisquito Canyon Road at the old Farmer John entrance. This route would destroy the Don-e-brook equestrian crossing, removing the Cotton Wood tree grove that acts as a buffer between the ranch and the canyon, Additionally, it imperils our well access, the new arena, etc. The detrimental effect on property values in the North Park tract could be significant. Objections must be received by regional planning by Monday, December 5th. Please take advantage of this sample.

E-mails may be sent to: oyov@planning.lacounty.gov

Send letters and petitions to:

Mr. Mitch Glasser Attn: OVO
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

DEC - 2 2010

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

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PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a resident, parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1.	SUZANNE KARA	7700 WILBUR AVE RESEDA, CA 91335	<i>S. Kara</i>	11-30-10
2.	NAME	ADDRESS	SIGNATURE	DATE
3.	NAME	ADDRESS	SIGNATURE	DATE
	NAME	ADDRESS	SIGNATURE	DATE

Letter No. D53

Letter from Suzanne Kara, December 2, 2010

Response 1

The commenter states that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots in San Francisquito Canyon. The commenter also states that Equestrian Trials, Inc. (ETI) members are active in the Santa Clarita Trails Advisory Committee and are currently working on the plans for a required trailhead at the location of McBean Parkway and Copper Hill Drive and that the area for this proposed trailhead is approximately 0.5 acre. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through

traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**)."

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

Glaser, Mitch

From: Dean Paradise [deanparadise@hotmail.com]
Sent: Thursday, December 02, 2010 1:17 PM
To: Glaser, Mitch
Subject: Sloan Canyon Road Designation

Hi Mitch.. I know you are busy so I will just give you my \$ 0.02 on this issue via email and a letter..

You should have received my letter regarding the designation of Sloan...

Simply put: I understand the desire of some of the neighbors to change the designation of Sloan from 4 lane to 2 lanes... While that may have been something to consider based on the growth of the area a couple of years ago, I do believe that decision should be postponed at this time.

There are too many unknowns at this time, particularly the location of the New Castaic High School.

Currently the Hart Board is reviewing the Romero Site for a High School and there is NO Traffic Study Completed at this time. There may very well be traffic generated which comes north on Sloan from Hillcrest. Furthermore there is another school site contemplated known as the Lombardi/Sloan Site.. Which is north and adjacent to the Catholic Church site on Sloan. This site would certainly use Sloan Canyon for access from the East to Parker and from the South to Hasley and Hillcrest.

I don't understand the rush to change this at this time, there could very well be new information in the next 6 months.

In my opinion the County should postpone any decision of the Future of Sloan Canyon Road until the completion of the EIR for the Castaic High School Site, whichever site is selected.

Thank you,

Dean Paradise
Phone: 661-803-2838
Fax: 661-294-1936

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Letter No. D54

Letter from Dean Paradise, December 2, 2010

Response 1

The commenter expresses his opinion that the County should postpone its decision of removing the Limited Secondary Highway designation of Sloan Canyon Road as there is uncertainty regarding the location of the proposed new Castaic High School. The commenter expresses his opinion that the new high school may generate traffic requiring the use of Sloan Canyon Road.

The comment raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment, as well as economic, social or political issues that do not appear to relate to any physical effect on the environment. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

111

December 2, 2010

Mr. Mitch Glaser
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Dear Mr. Glaser:

Re: H2 Land Use Category- Tract No. 51644 - Tesoro del Valle

This is to request that the land use designation as H2 from A2-2 for the remaining Phase B and C of Tesoro del Valle be denied. This is also to request that RL 1 or 2 be applicable instead allowing a min. of 1 to 2 acres lots, the rural street standards, and allowed agricultural uses such as horse keeping, as was the intent in 1999 when Tract No. 51644 was approved by the Board of Supervisors with the 1 to 5 acre configuration.

The community of San Francisquito Cyn worked very hard for many years to secure the C.U.P. to retain these two phases as agricultural land uses.

The original approval for the Tesoro del Valle project allowed 122 dwelling units on Planning Area B for 595.5 gross acres of land and 115 dwelling units in Area C on 668.7 gross acres with a zone designation throughout of A-2. This would be a total of 237 dwelling units for the entire area.

When the C.U.P. was approved, Phase A was rezoned to accommodate 1,500 units. Only a little over 1,000 were built leaving a balance of 400 or so. Now Tesoro Del Valle wants to transfer this 'unfortunate planning' to the remaining two phases. Their poor or purposeful planning from SunCal Companies does not require that the remaining phases absorb this 'mistake' or retaliation to the those who worked to downsize the previous sought density of 3,000 being reduced to 1,791 units This density transfer is unacceptable.

The developer has already submitted their plans to the County incorporating the now 750 homes to this remaining land portion without a General Plan Amendment.

The One Valley One Vision (OVOV) appears to support this developer's plans by first changing the approved land use designation to allow the density transfer. Public hearings and subsequent appeal to the Board of Supervisors will ensue.

Sincerely,



Sherrie Stolarik, Member of San Francisquito Preservation Association
Member of Equestrian Trails, Inc, and SCVTAC & ETI
25241 Carson Way, Stevenson Ranch, CA 91381

Letter No. D55

Letter from Sherrie Stolarik, December 2, 2010

Response 1

The commenter requests that the proposed Area Plan's land use designation of Residential 2 (H2) for Phases B and C of Tesoro del Valle project be denied and changed to Rural Land 1 (RL1) or Rural Land 2 (RL2). The commenter describes the previous approval of the Tesoro del Valle project and notes that the developer has filed an application to amend the previous approval through a density transfer. The commenter then states that the proposed Area Plan appears to support the developer's plans by allowing the density transfer.

The comment raises issues pertaining to the proposed land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Nonetheless, it should be noted that the pending application related to the Tesoro del Valle project will be reviewed by the Regional Planning Commission prior to approval.

1 / 1

OVOV

From: lillyamy@aol.com
Sent: Thursday, December 02, 2010 10:02 AM
To: OVOV
Subject: San Francisco Canyon

December 2, 2010

Mr. Mitch Glaser Attn: OVOV
Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of McBean Parkway onto San Francisquito Cyn Road One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in Nov. 2009, I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horskeeping and trails on the approved SunCal Project in the canyon and also four new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI members are active in the Santa Clarita Trails Advisory Committee and currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

Amy Lillenberg
ETI Corral 86

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Letter No. D56

Letter from Amy Lillenberg, December 2, 2010

Response 1

The commenter states that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots in San Francisquito Canyon. The commenter also states that Equestrian Trials, Inc. (ETI) members are active in the Santa Clarita Trails Advisory Committee and are currently working on the plans for a required trailhead at the location of McBean Parkway and Copper Hill Drive and that the area for this proposed trailhead is approximately 0.5 acre. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through

traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**)."

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

Glaser, Mitch

From: Thomas, Bruce [bthomas@curtisswright.com]
Sent: Thursday, December 02, 2010 7:42 AM
To: Glaser, Mitch
Subject: Sloan Canyon preservation

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Dear Mr. Glaser,

I agree with the County's proposed changes to the Master Plan of Highways that would remove the "limited secondary highway" designation from Sloan Canyon Road (north of Hillcrest Parkway), but believe it would make sense to include Sloan Canyon Road (south of Hillcrest Parkway) as well. This road would be sufficient for future use as a 2 lane secondary road, as 24/36 feet would allow emergency vehicles to respond to any probable incident.

This area has always been agriculturally zoned, and parcels are primarily used for these purposes. To maintain the largely equestrian nature of this area, it makes perfect sense to remove the secondary highway designation to preserve the community character.

1

Thank you,
Bruce Thomas
30521 Sloan Canyon Road
Castaic

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Letter No. D57

Letter from Bruce Thomas, December 2, 2010

Response 1

The commenter states that he is in agreement with the proposed Area Plan's change to the Master Plan of Highways that would remove the Limited Secondary Highway designation from Sloan Canyon Road.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter states that he is also in favor of removing the Limited Secondary Highway designation from Sloan Canyon Road south of Hillcrest Parkway to Hasley Canyon Road; as such, a removal would maintain the largely equestrian nature of this area and would preserve the community character while still allowing emergency vehicles to respond to any probable incident.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/4

We are petitioning the removal of the Mc Bean extension to San Francisquito Canyon Road as proposed by Los Angeles County Regional Planning and the One Valley One Vision Highway plan. The proposed extension would join San Francisquito at the old Farmer John lateral motorway intersection and negatively impacting our equestrian facility. This extension would destroy a key equestrian crossing, trail access, cotton wood grove (acting as a buffer between us and the Tesoro development) and imperil access to our water well. Increase traffic flow would endanger riders, horses, and vehicle occupants.

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Don-e-brook Farms (<http://www.donebrookfarms.com>) was established in the 1960's and it one of the last public riding facilities left in the Santa Clarita Valley. Our large riding school has taught three generations of riders the skills and enjoyment of horseback riding. Don-e-brook Farms is home to (since 1968) to the California Rangers (<http://www.californiarangers.org/>), a large non-profit youth equestrian drill team established in 1944. Additionally, ETI (Equestrian Trails, Inc.) corral 77 is headquartered at Don-e-brook Farms.

Your input consideration is greatly be appreciated!

Liz Farinella-Ekeberg, Owner, Don-e-brook Farms
Eric E Ekeberg (LACoFD retired)
28680-28710 San Francisquito Canyon Road
Santa Clarita, CA 91390
661-297-7669
Fax: 661-297-7025

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. VENETIA MORGAN 25319 IRVING-SC 91381 *V. Morgan*
NAME ADDRESS SIGNATURE DATE

2. Leanne Richter 27716 Crookshank CA 91350 *[Signature]* 11-30-10
NAME ADDRESS SIGNATURE DATE

3. Judy Williams 24069 Regents Park *J. Williams* 11-30-10
NAME ADDRESS SIGNATURE DATE

4. Dustin Richter 27716 Crookshank 91350 *[Signature]* 11-30-10
NAME ADDRESS SIGNATURE DATE

5. Casa Richter 27716 Crookshank 91350 *[Signature]* 11-30-10
NAME ADDRESS SIGNATURE DATE

6. Jan Williams 24069 Regents Park CA 91350 *[Signature]* 11-30-10
NAME ADDRESS SIGNATURE DATE

7.
NAME ADDRESS SIGNATURE DATE

8.
NAME ADDRESS SIGNATURE DATE

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PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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1. Patricia Ann Hagale 22236 Canones Cirle Patricia Ann Hagale 11/30/10
NAME ADDRESS SIGNATURE DATE
Saugus, CA 91350

2. Dennis D. Hagale 22236 Canones Cir Dennis D. Hagale 11-30-10
NAME ADDRESS SIGNATURE DATE
Saugus Ca 91350

3.
NAME ADDRESS SIGNATURE DATE

4.
NAME ADDRESS SIGNATURE DATE

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NAME ADDRESS SIGNATURE DATE

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NAME ADDRESS SIGNATURE DATE

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NAME ADDRESS SIGNATURE DATE

8.
NAME ADDRESS SIGNATURE DATE

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**PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED
EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN
FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.**

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. ELKE JAEGER Sunland 10351 Parr Ave Elke Jaeger 11/28/10
NAME ADDRESS SIGNATURE DATE

2. Leslie Helton 5041 Zed Ave Leslie Helton 11/28/10
NAME ADDRESS SIGNATURE DATE

3. STEPHANIE KOSGER GLENDALE 1505 RIDGEVIEW DR Stephanie Kosger 11/28/10
NAME ADDRESS SIGNATURE DATE

4. Schroeder Darryn 29047 N. Ironwood Ln Darryn Schroeder 11-29-10
NAME ADDRESS SIGNATURE DATE

5. Kelly White 2841 Tamarack Ln Kelly White 11/29/10
NAME ADDRESS SIGNATURE DATE

6. _____
NAME ADDRESS SIGNATURE DATE

7. _____
NAME ADDRESS SIGNATURE DATE

8. _____
NAME ADDRESS SIGNATURE DATE

Letter No. D58

Letter from Don-E-Brook Farms, Unknown Date

Response 1

The commenter petitions the removal of the extension of McBean Parkway onto San Francisquito Canyon Road, as it would negatively impact their equestrian facility, would destroy a key equestrian crossing, and would imperial access to their water well. The commenter also states that this extension would increase traffic flow and endanger riders, horses, and vehicle occupants.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/4

We are petitioning the removal of the Mc Bean extension to San Francisquito Canyon Road as proposed by Los Angeles County Regional Planning and the One Valley One Vision Highway plan. The proposed extension would join San Francisquito at the old Farmer John lateral motorway intersection and negatively impacting our equestrian facility. This extension would destroy a key equestrian crossing, trail access, cotton wood grove (acting as a buffer between us and the Tesoro development) and imperil access to our water well. Increase traffic flow would endanger riders, horses, and vehicle occupants.

1

Don-e-brook Farms (<http://www.donebrookfarms.com>) was established in the 1960's and it one of the last public riding facilities left in the Santa Clarita Valley. Our large riding school has taught three generations of riders the skills and enjoyment of horseback riding. Don-e-brook Farms is home to (since 1968) to the California Rangers (<http://www.californiarangers.org/>), a large non-profit youth equestrian drill team established in 1944. Additionally, ETI (Equestrian Trails, Inc.) corral 77 is headquartered at Don-e-brook Farms.

Your input consideration is greatly be appreciated!

Liz Farinella-Ekeberg, Owner, Don-e-brook Farms
Eric E Ekeberg (LACoFD retired)
28680-28710 San Francisquito Canyon Road
Santa Clarita, CA 91390
661-297-7669
Fax: 661-297-7025

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1. Julie Hugsman 25523 Meadowmont Valencia CA Julie Hugsman 11/30/10
 NAME ADDRESS SIGNATURE DATE
2. Christine Cooper 29331 Via Estancia Encinitas 11/30/10
 NAME ADDRESS SIGNATURE DATE
3. Devon Mayberry 23372 Revmonct Valencia Devon Mayberry 11/30/10
 NAME ADDRESS SIGNATURE DATE
4. Jael von Mecklenburg 23002 Edenton Pl Valencia CA 91354 Jael von Mecklenburg 11/30/10
 NAME ADDRESS SIGNATURE DATE
5. Lisa Wallace 23955 Arroyo Park Dr, #159 Valencia, CA 91355 Lisa Wallace 12-1-10
 NAME ADDRESS SIGNATURE DATE
6. KIM KOCH 20342 HILTOPPOINT PL CYNTRIA CA 91351 Kim Koch 12-1-10
 NAME ADDRESS SIGNATURE DATE
7. Shawn Campbell 28472 Montroy Ct, Castaic CA 91384 Shawn Campbell 12-1-10
 NAME ADDRESS SIGNATURE DATE
8. LARRY SARNIECKI 20504 ROMARLAN SAUGUS, CA 91350 Larry Sarniecki 12/1/10
 NAME ADDRESS SIGNATURE DATE

3/4

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. Michelle Farmer 22039 Pamplico Dr Michelle Farmer 11-30-10
NAME ADDRESS SAUGUS SIGNATURE DATE

2. Cheryl Crossman 28319 Allen St Cheryl 11-30-10
NAME ADDRESS SIGNATURE DATE

3. Michelle Myerson 25449 Mojave Ln Michelle Myerson 11/30/10
NAME ADDRESS SAUGUS SIGNATURE DATE

4. Laurie Krivak 27702 Caraway Ln Laurie Krivak 11-30-10
NAME ADDRESS SAUGUS CA SIGNATURE DATE

5. Angelica Glosup 28244 N. Rodgers Dr. Angelica Glosup 11/30/10
NAME ADDRESS SAUGUS CA SIGNATURE DATE

6. Paige Glosup 28249 Rodgers Dr Paige Glosup 11-30-10
NAME ADDRESS SAUGUS CA SIGNATURE DATE

7. Dean Glosup 28249 N RODGERS DR Dean Glosup 11/30/10
NAME ADDRESS SAUGUS CA SIGNATURE DATE

8. Mary Elizabeth Glosup 28249 N Rodgers Dr Mary Elizabeth Glosup 11/30/10
NAME ADDRESS SAUGUS CA SIGNATURE DATE

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. HELEN MURPHY 26228 RAINBOW BLEND DR, NEWBALL, CA 91321 *Helen Murphy 11/27/10*
NAME ADDRESS SIGNATURE DATE

2. PATRICIA L. McCANDLESS 26218 Rainbow Glen Newhall 91321 *Patricia L. McCandless 11/27/10*
NAME ADDRESS SIGNATURE DATE

3. Alice Culver 19226 A Ave of the Oaks Newhall Ca 91321 *Alice Culver 11/27/10*
NAME ADDRESS SIGNATURE DATE

4. Nicoletteantino 26053 Casaway Ln. *Nicoletteantino 11/30/10*
NAME ADDRESS SIGNATURE DATE

5. Dorothy Brown 24355 Peppermint LN *Dorothy Brown 11/30/10*
NAME ADDRESS SIGNATURE DATE

6. Madison Baca 37436 Daybreak St *Madison Baca 11/30/10*
NAME ADDRESS SIGNATURE DATE

7. Ann Camargo 15659 Poppyseed Lane *Ann Camargo 11/30/10*
NAME ADDRESS SIGNATURE DATE

8. Cheyenne Hall 22017 Lucy Ct. *Chm KAHN 11/30/10*
NAME ADDRESS SIGNATURE DATE

Letter No. D59

Letter from Don-D-Brook Farms, Unknown Date

Response 1

The commenter petitions the removal of the extension of McBean Parkway onto San Francisquito Canyon Road, as it would negatively impact their equestrian facility, would destroy a key equestrian crossing, and would imperial access to their water well. The commenter also states that this extension would increase traffic flow and endanger riders, horses, and vehicle occupants.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

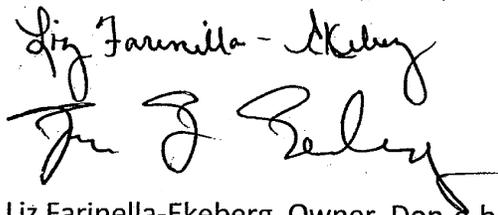
Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

We are petitioning the removal of the Mc Bean extension to San Francisquito Canyon Road as proposed by Los Angeles County Regional Planning and the One Valley One Vision Highway plan. The proposed extension would join San Francisquito at the old Farmer John lateral motorway intersection and negatively impacting our equestrian facility. This extension would destroy a key equestrian crossing, trail access, cotton wood grove (acting as a buffer between us and the Tesoro development) and imperil access to our water well. Increase traffic flow would endanger riders, horses, and vehicle occupants.

1

Don-e-brook Farms (<http://www.donebrookfarms.com>) was established in the 1960's and it one of the last public riding facilities left in the Santa Clarita Valley. Our large riding school has taught three generations of riders the skills and enjoyment of horseback riding. Don-e-brook Farms is home to (since 1968) to the California Rangers (<http://www.californiarangers.org/>), a large non-profit youth equestrian drill team established in 1944. Additionally, ETI (Equestrian Trails, Inc.) corral 77 is headquartered at Don-e-brook Farms.

Your input consideration is greatly be appreciated!



Liz Farinella-Ekeberg, Owner, Don-e-brook Farms
Eric E Ekeberg (LACoFD retired)
28680-28710 San Francisquito Canyon Road
Santa Clarita, CA 91390
661-297-7669
Fax: 661-297-7025

PETITION TO REMOVE THE EXTENSION OF MC BEAN FROM COPPER HILL DRIVE TO SAN FRANCISQUITO CANYON ROAD

As parents of a child who takes lessons at Don E Brook Farms in San Francisquito Canyon and uses the trails in the canyon, we are opposed to the extension of Mc Bean onto San Francisquito Canyon Road. This extension would threaten their safety when riding horses to and from Don E Brook to the arena and trails on the West side of the road. San Francisquito Canyon Road is a rural, winding road. It causes drivers to slow for safety reasons. The extension of Mc Bean would direct traffic straight towards our equestrian crossing and would encourage faster speeds than the current road, does imperiling riders, horses, and occupants of cars. In the interest of public safety as well as good rural street design we ask that this extension be removed.

1. BONNIE THEBERGE 24561 LORIKET LANE
Name Address VALENCIA, CA 91355 Bonnie Theberge Signature 11/27/10 Date
2. Jill Dallaire 21638 Farmington Lane
Name Address Santa Clarita, CA 91350 J Dallaire Signature 11/27/10 Date
3. Melissa Manasse 29059 Raintree Ln
Name Address Santa Clarita, CA 91390 Melissa Manasse Signature 11/27/10 Date
4. Tom Manasse 29059 Raintree Ln
Name Address Santa Clarita, CA 91390 Tom Manasse Signature 11/27/10 Date
5. Tiffany Monaco 27907 Caraway Ln
Name Address Santa Clarita CA 91350 Tiffany Monaco Signature 11/27/10 Date
6. STEPHEN GEORGE 18939 CLAY CREST DR.
Name Address SANTA CLARITA, CA 91351 Stephen George Signature 11/27/10 Date
7. FRANCIS GEORGE 18939 Claycrest Dr
Name Address C.C, CA 91351 Francis George Signature 11/27/10 Date
8. Elizabeth ElCobey 28710 San Francisquito
Name Address 91390 Elizabeth ElCobey Signature 11/26/10 Date
9. Rebecca Stivers 21618 Nutmeg Lane 91350
Name Address Rebecca Stivers Signature 11/26/10 Date
10. DEBBIE STIVERS 21618 NUTMEG LANE
Name Address 91350 Debbie Stivers Signature 11-26-10 Date

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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- 1. CHRIS TUDNEY 18809 SINK CANYON LN [Signature] 11/29/10
NAME ADDRESS SIGNATURE DATE
- 2. SUSANNE LEE 1406 EL VAGO ST. [Signature] 11/27/10
NAME ADDRESS LA Canada, CA SIGNATURE DATE
- 3. CLAUSSA REEB [Signature] 28160 McBean Pkwy [Signature] 11/27/10
NAME ADDRESS SIGNATURE DATE
- 4. JOSEPH GARDANO 28706 RainTree Ln [Signature] 11/27/10
NAME ADDRESS SIGNATURE DATE
- 5. IRIS CAPER 29331 Via Estancia [Signature] 11/27/10
NAME ADDRESS SIGNATURE DATE
- 6. CHRISTINE CAPER 29331 Via Estancia [Signature] 11/27/10
NAME ADDRESS SIGNATURE DATE
- 7. JOHN CAPER 29331 Via Estancia [Signature] 11/27/10
NAME ADDRESS SIGNATURE DATE
- 8. ERIC KEBERL 28680 SAN FRANCISQUITO [Signature] 11-27-10
NAME ADDRESS SIGNATURE DATE

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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1. Kathleen Pennington 24129 del Monte #162 Pennington
NAME ADDRESS SIGNATURE DATE

2. Donna Nelsen 23940 Via Rosa Linda Nelsen
NAME ADDRESS SIGNATURE DATE

3. Jen Berdano 28706 Raintree Ln Berdano 11/27/10
NAME ADDRESS SIGNATURE DATE

4. Karen Berdano 28706 Raintree Karen Berdano 11-27-10
NAME ADDRESS SIGNATURE DATE

5. Susanna Douglas 3669 Urquidez Ave. Douglas 11/27/10
NAME ADDRESS SIGNATURE DATE

6. Joan Kimura 10232 TINKER AVE. Joan Kimura 11/27/10
NAME ADDRESS SIGNATURE DATE

7. P. STENGER 15456 GLENDALES BL 231 Stenger 11/27/10
NAME ADDRESS SIGNATURE DATE
5/11th Cir 91342

8. Susan Whitmore 15455-92. Glendales Blvd Whitmore 11/27/10
NAME ADDRESS SIGNATURE DATE

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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1. Rosafunda Towany 18809 Stone Canyon Santa Clarita 11/27/10

2. Ashley MacLennan 22005 Kristin Lane 11/27/10

3. Brooke Faber 27026 Maple Tree Court Brooke Faber 11/28/10

4. Catherine Driver 28205 Stanley Ct. Canyon Country CA 11/28/10

5. Catherine V. Pulsifer 19830 Drossin Drive Cyn City CA 11/28/10

6. Justin Yukon 6958 Nyle Ave, N. Hollywood CA 91605 11/28/10

7. Alyssa Burke 4412 Osageo St Samba CA 91340 11/28/10

8. Dawn Hill 28368 Lobelia Ln Valencia CA 91380 11/28/10

Letter No. D60

Letter from Don-E-Brook Farms, Unknown Date

Response 1

The commenter petitions the removal of the extension of McBean Parkway onto San Francisquito Canyon Road, as it would negatively impact their equestrian facility, would destroy a key equestrian crossing, and would imperial access to their water well. The commenter also states that this extension would increase traffic flow and endanger riders, horses, and vehicle occupants.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

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The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of Mc Bean Parkway onto San Francisquito Cyn Road
One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in November 2009, and as the Area 11 Director for Equestrian Trails, Inc., I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horse keeping and trails on the approved Sun Cal Project in the canyon and also retained horse keeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI is an active member of The Santa Clarita Trails Advisory Committee and is currently working on the plans for a required trailhead at the location of Mc Bean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

Debbie Foster, Area 11 Director
Equestrian Trails Inc, SCVTAC,
and San Francisquito Cyn Preservation Association

1

Letter No. D61

Letter from Equestrians Trails Inc., Unknown Date

Response 1

The commenter requests that the extension of McBean Parkway be removed from the Master Plan of Highways based upon safety concerns for ranches and horses. The commenter states that the extension would increase the speed of vehicles, would not provide a safe crossing with signals, and would defeat the purpose of the San Francisquito Canyon Community Standards District. The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2 Transportation/Circulation. Specifically, Section 3.2, Transportation/Circulation page 55 addresses the issue regarding roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

A conclusionary statement has been added to this paragraph to read, “The implementation of the policies would reduce the potential impact on hazardous roadway design to less than significant.” Please see the portion of the Revised Final EIR entitled, “Revised Draft EIR pages,” for the actual text revision.

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

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Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/19

Eugene Lombardi
4322 Manchester Ave.,
Olivenhain, Ca. 92024
(760) 753-6809
ETLombardi@cox.net

December 4, 2010

Los Angeles County Regional Planning Commission
320 West Temple Street
Los Angeles, CA 90012

Subject: 2009 OVOV proposed change of Limited Secondary Highway (Sloan)

Dear Planning Commissioners:

This letter is to supplement a previous letter I wrote to the Planning Commission dated October 8, 2009. Please include this supplement letter into the record as well.

While the previous correspondence to this commission focused attention toward the respectful merits and sound area wide circulation planning by LA County in which today continues it's designated of the Sloan Canyon roadway (previously known as Camino Del Valle) as a highway within the Santa Clarita General Plan, this correspondence directs it's attention to the underlying facts of findings for your review.

1

Please incorporate these facts into your evaluation and consideration to support and endorse recommendations in retaining the current "Limited Secondary Highway" designation, of Sloan Canyon Roadway within the community of Castaic, as well as the draft amendment of the OVOV General Plan.

This letter opposes the removal of Sloan Canyon Road of it's current Limited Secondary Highway designation and further supports placing this complete roadway back into the Castaic Benefit Area.

Respectfully,
Eugene Lombardi

cc:

- Mitch Glaser, AICP Supervising Regional Planner (countywide studies section)
- Paul Novak, Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy
- Steve Berger, LA County Public Works
- Robert Kelly, President, Castaic Town Council
- Amy Minter (Chatten-Brown & Carstens) Representatives of Citizens of Castaic

Facts of Findings to oppose the removal of Sloan Canyon Road as a Limited Secondary Highway

	Facts of Findings Description	More info Pg #
1	Sloan Canyon Road is currently defined on the Los Angeles County Master Highway Plan designated as a Limited Secondary Highway and a precedence for this designation to remain has been established and perfected.	4
2	With the precedence set of some forty plus years ago, and as defined on the Santa Clarita General Plan and the LA County Master Plan of Highways, numerous investors (developers, land owners and residents) acquired their land in reliance of this future roadway and it's exact alignment prior to making their investment.	5
3	This "designation proceeding" is more than meets the eye. It's results is not limited in nature but also has a direct relationship with both the previous 1992 Castaic B&T District (which included these improvements) and the amended 2009 Castaic B&T District (which has has deleted these improvements within the budget), yet ignores the requirement to place those improvement cost into the District of all highways listed, of which today this Sloan Canyon Roadway is defined on the Plan Highway Plan..	6-8
4	Leaders of LA County and of the Castaic Community have failed to demonstrate sound rational reasons of support "why and how the removal of this Limited Secondary Highway designation would be in the best interest of LA County and the Castaic Community.	8
5	The Castaic Area Town Council is supporting the removal of the Limited Secondary Highway designation with some type of compromise. It is highly questionable whether the CATC has the full support of the community for such request AND even if it does, the support of this request is not allowed per the provisions of the CSD ordinance and the By-laws of the Castaic Area Town Council.	9
6	Vested Tract Map #47807 is an approved subdivision that is grandfathered (exempt) of the 2004 Castaic CSD Ordinance. As conditionally approved, this subdivision along with it's approved mitigated access utilizes portions of the Limited Secondary Highway (Sloan Canyon Road) and qualifies for B&T Credits under the Castaic Benefit Area. Removing the Limited Secondary Highway designation would negatively affect the approvals protected under the Subdivision Map Act. The Castaic Area Town Council and the LA County Department of Regional Planning are required and obligated to protect previously approved projects prior to the formation of the Castaic Area CSD Ordinance (in addition to it's approved conditions), whereby it's approved conditions specifically includes offsite access improvements cost within the Castaic Benefit Area commonly known as the Limited Secondary Highway designation area on Sloan Canyon Road). This tract (in addition to a vast area) are all a part of the Castaic Area B&T District and subject to the provisions of it's ordinance.	10-11

Facts of Findings to oppose the removal of Sloan Canyon Road as a Limited Secondary Highway

	Facts of Findings Description	More info Pg. #
7	Formation of the Castaic Area CSD: During the formation period of the Castaic Area CSD, in March of 2004 the Castaic Area Town Council sought permission from LA County to remove the Limited Secondary Highway designation of Sloan Canyon Road and was denied. The request today to remove the designation is an attempt to take another bite out of the apple and should be again denied.	12
8	The Castaic Area Town Council has proposed a request for the planners of LA County to establish on the draft amended OVOV Santa Clarita General Plan for the area wide highway circulation to include a new north-south Limited Secondary Highway alignment located somewhere on the east side, claiming the future need for secondary access is essential. Yet, at the same time, the CATC is recommending it's support to remove the current area wide Secondary Limited Highway circulation designation on the west side, within an area that today desperately needs secondary access for it's current and future residential population. Where is the rational here?	13
9	The community of Castaic is undergoing evaluation for a High School site. There are four locations of which are classified as acceptable sites, all of which are subject to the "Alternative site comparisons" during the CEQA EIR process. The current alignment and it's Secondary Limited Highway designation of Sloan Canyon Roadway is a key area wide roadway circulation alignment that benefits any and all of the four locations as well as the entire community of Castaic for area wide circulation. In this case, one shoe fits all!	14

Fact #1. Sloan Canyon Road is currently defined on the Los Angeles County Master Highway Plan designated as a Limited Secondary Highway and a precedence for this designation to remain has been established and perfected.

On March 26, 1992 the Castaic B&T District was adopted with an estimated improvement budget of approximately \$26MM. This B&T District included a major highway designation of Camino Del Valle (now known as Sloan Canyon Road) including the specific sector from Parker and making a connection to Hasley Canyon Road. While the designation of this roadway has since been downgraded to its current designation as a Limited Secondary Highway, at issue is the removal of the current designation.

Since formation of this B&T District, \$10,600,410 in B&T funds (fees and interest) have been collected toward these District regional improvements whereby the ordinance was specific toward advancing Sloan Canyon Roadway as a highway (major or limited). This results in approximately 41% of the funds (fees and interest) collected to date.

The fact that LA County had foresight to define the future needs for an area wide circulation plan some forty some years ago, today it continues to have merit to provide area wide regional benefits to the entire community and is essential to be incorporated within the draft amendment of the OVOV General Plan update.

It should be noted, the previous adoption of the Castaic B&T District (a District that included in part) this Sloan Canyon Road as a highway, has already collected substantial funds, thus establishing a clear precedence for it to remain as a designated Limited Secondary Highway. In sum, there were demands for contributions toward the improvements of this future roadway and there were representations of what regional benefits would return in the future to the community, all via the adoption of the 1992 Castaic B&T District.

With funds collected toward such ordinance, (whether in part or in full), there has been intent and reliances and the collection of fees have perfected the obligation and requirement.

(Information Source of funds collected to date toward the improvements of Sloan Canyon Road are listed within the August 2009 Castaic B&T Amendment. The Chart shown below is an extraction.)

Description	Amount (as of 5/31/09)
Funds Collected to date (includes interest)	\$10,600,410
Expenditures	\$8,211,543
Funds Available	\$2,388,867

Fact #2: With the precedence set of some forty plus years ago, and as defined on the Santa Clarita General Plan and the LA County Master Plan of Highways, numerous investors (developers, land owners and residents) acquired their land in reliance of this future roadway and it's exact alignment prior to making their investment.

As a fundamental basis, a General Plan along with it's defined area wide roadway circulation element of highways is to not only provide planning elements for the current and future needs, but to place on RECORDED PUBLIC RECORD specific information as to the rules, regulations and guidelines for developers, land owners and residents to have access of planning criteria and knowledge. In sum, a general plan is an information highway in which personal decisions can be made prior to acquisition and much more. This is not a good thing, but a great thing and an essential element for all.

Further what it provides in relationship toward this hearing is a factual basis for which it can support the desires of all opponents and proponents alike. What has been known for decades now is that the Sloan Canyon Road is still to this day listed on the Master Highway Plan and this area and it's alignment are still a requirement obligation to fund B&T District Fees (whatever amount they are). While District B&T Fees are an obligation or a burden on one hand, they provide a regional benefit to all on the other.

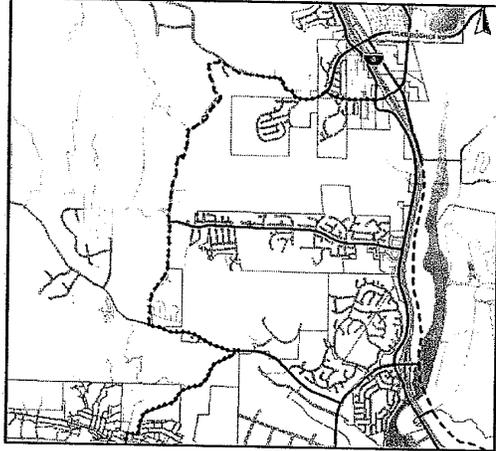
Unlike some of the comments for supporters to remove this Secondary Limited Highway designation, it is not just about developers. While development projects do have more than one home site, the Benefit District is all relative as it is based on a per unit requirement. Take a vacant parcel owned by anyone. Large or small it does not matter. Prior to adoption of the Amended August 2009 Castaic B&T District, that owner could have built their dream house in Romero, Hasley or Sloan Canyon for example and would have paid \$3,400 toward the B&T District of which such payment would have went into the B&T kitty for all roadway improvements within the District including a future roadway adjacent that brings them regional and circulation benefit. Today, the same person wishing to build their dream house on a two acre lot would have to pay almost 5 times more (\$16,700) to the District that EXCLUDES a future roadway adjacent that DOES NOT bring them any regional and circulation benefit. This is flawed and this is what would occur if the Secondary Limited Highway designation is removed. In this example, the only difference between a person wishing to build their one dream home and a developer is the number of homesites. Nevertheless, there are regional benefits that serve all within a Benefit District. Just because the improvements of Sloan Canyon Roadway have not yet been made out of the previous B&T pool, does not provide grounds to remove it now, especially after numerous individuals have already paid their required obligations toward this ordinance.

For those whom have yet to make contributions toward the B&T District (whatever the fees are), have made investments with consideration to the approved Santa Clarita General Plan, A General Plan that included the LA County Master Highway Plan defining this exact "Sloan Canyon Road" and it's current alignment and designation. I am one of those investors. I have invested heavily and I have relied upon both the General Plan and the adopted LA County Master Highway Plan in the process. I am not alone. There are countless others that have invested with knowledge of the current General Plan that identifies the current circulation element of Sloan Canyon Road. While I am only one of many, changing the game plan now, is not planning, but de-planning and by removing the designation of a Limited Secondary Highway short changes the regional benefits designed to serve a community consisting of about 25,000 for the use of necessity, convenience and emergency purposes. While it always has been a good plan, it can only remain valid with it's intent, by retaining it's current designation, one that many have already relied upon.

6/19

Fact #3. This "designation proceeding" is more than meets the eye. It's results is not limited in nature but also has a direct relationship with both the previous 1992 Castaic B&T District (which included these improvements) and the amended 2009 Castaic B&T District (which has has deleted these improvements within the budget), yet ignores the requirement to place those improvement cost into the District of all highways listed, of which today this Sloan Canyon Roadway is defined on the Master Highway Plan.

There are inconsistencies today that need to be cleaned up. The current inconsistencies is the current Master Highway Plan that includes the Sloan Canyon Road as a Secondary Limited Highway (as shown on Gisnet, LA County Regional Planning website)



and the inconsistencies that such improvement cost was removed from the amended 2009 Castaic B&T District when it's language clearly states it must be included. (The illustration source below is extract from the August 2009 Castaic B&T Amended ordinance).

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The Castaic Bridge and Major Thoroughfare Construction Fee District (District) was adopted on March 26, 1992. Since that time, some of the projects initially included in the District have been completed, and the Department of Public Works (Public Works) has determined that certain new projects should be added and certain listed projects should be deleted. Additionally, Public Works has determined that certain areas previously excluded in the District should be added into the District. Lastly, Public Works has determined that the existing fee amounts have become inadequate to fully fund the proposed revised project list. The purpose of this action is to find that the proposed revisions to the District are exempt from the California Environmental Quality Act (CEQA) and to update the District to account for the changed circumstances described above.

The proposed update of the District's boundaries, list of projects, and fees reanalyzes build-out development and expand the scope of District improvements. Instead of including only selected improvement projects, the updated District proposes to fully improve all roadways identified on the County circulation element. Improvements will include full-width grading, base, pavement, curb, gutter, sidewalk, medians, striping, bus pads (where applicable), bike lanes (where applicable), fully improved and signalized intersections, signal interconnect (where applicable), street lighting, roadway-related utility relocation, drainage structures within road right of way, and full improvements for bridges and freeway interchanges. Right of way is assumed to be dedicated by individual development projects, except for State highway projects and roadway widenings that are unrelated to private development.

7/19

And the inconsistencies continue. When considering OVOV, and the draft General Plan amendment, the language again references Sloan Canyon Road (Source below OVOV)

This update re-analyzes build-out development of the District and expands the scope of District improvements. The updated District proposes to provide full mitigation for all roadways identified on the Los Angeles County Santa Clarita Valley Area Wide Circulation Plan, including intersections and interchanges. These roadways are Castaic Road, Del Valle Road, Hillcrest Parkway, Hasley Canyon Road, Lake Hughes Road, Parker Road, Ridge Route Road, Sloan Canyon Road, and The Old Road.

and to continue further - as shown below - OVOV defines on page 70, II Background of the Circulation Element that California Government Code Section 65302(b) states that the General Plan SHALL INCLUDE THE LOCATION AND EXTENT OF EXISTING AND PROPOSED MAJOR THOROUGHFARES (which should include ALL of the current alignment of Sloan Canyon road in it's entirety),

II. BACKGROUND

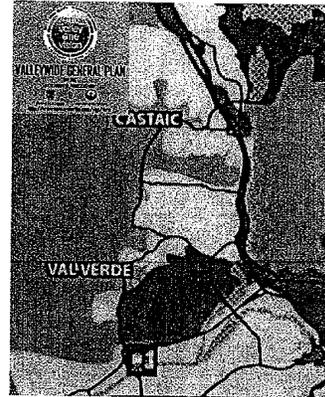
The California Government Code describes conditions and data that must be researched, analyzed, and discussed in a Circulation Element. Section 65302(b) states that the General Plan shall include the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals and other local public utilities and facilities. The City and County are also required to coordinate the Circulation Element provisions with regional transportation plans, as set forth in Government Code Sections 65103(f) and 65080. Regional plans affecting the Santa Clarita Valley include those of the California Department of Transportation (Caltrans); the Regional Mobility Plan prepared by the Southern California Association of Governments (SCAG); the Los Angeles Metropolitan

9/19

Fact #5: The Castaic Area Town Council is supporting the removal of the Limited Secondary Highway designation with some type of compromise. It is highly questionable whether the CATC has the full support of the community for such request AND even if it does, the support of this request is not allowed per the provisions of the CSD ordinance and the By-laws of the Castaic Area Town Council.

For comparison purposes, the following illustrations are extracted from OVOV publishing's by LA County.

This 2007 published OVOV illustration brochure shows the Limited Secondary Highway making a connection from the township of Castaic, and connecting to Hasley Canyon Road via Sloan Canyon Road.



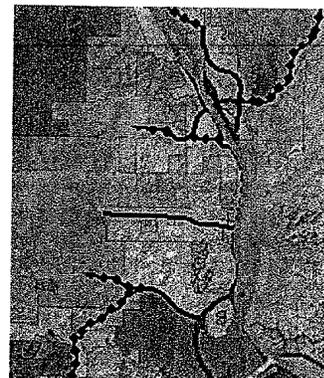
This is exact and similar to the Secondary Highway that is currently in effect and shown on the Master Highway Plan of LA County. This illustration would also be consistent with California Government Code section 65302(b) that defines all current highways on the current General Plan to be included within the Amended General Plan.

This published OVOV illustration contradicts the above illustration and shows the Limited Secondary Highway is compromised to only connect between Hillcrest Parkway and Hasley Canyon Road.



This is similar to what is identified and defined within the August 2009 amended Castaic Area B&T District. It certainly is not an area wide circulation plan and is a very poor compromise.

This illustration is amended to show the area wide roadway circulation that is proposed by the Castaic Area Town Council with it's recent request letter to remove Sloan Canyon Road as a Limited Secondary Highway.



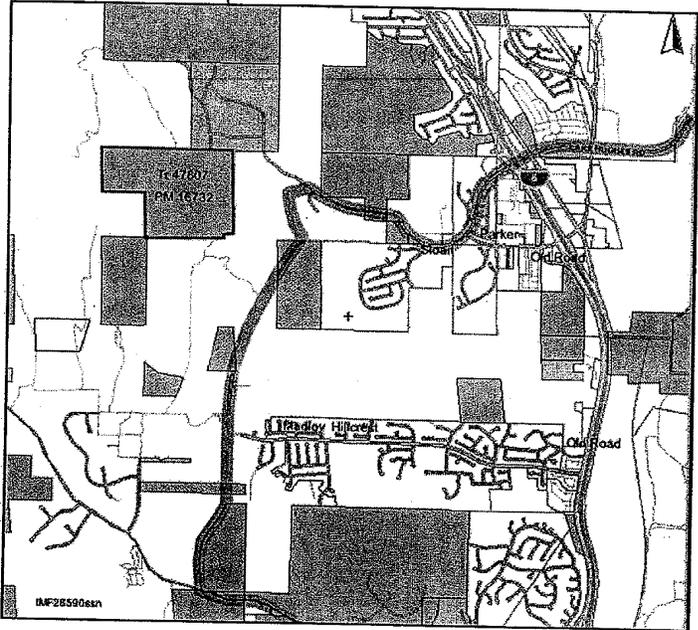
While it does extend Sloan slightly westward toward Tract #46443, it excludes area wide circulation and is defined as the "road to nowhere". To my understanding, this is the proposed compromise that is presented by the CATC and being considered by LA County.

Just where is the justification to support this design would be in the best interest of the Castaic Community. It is not planning, but De-planning and completely ignores the circulation element. Where is the need to compromise for the area wide plan as shown on the top illustration?

10/19

Fact #6. Vested Tract Map #47807 is an approved subdivision that is grandfathered (exempt) of the 2004 Castaic CSD Ordinance. As conditionally approved, this subdivision along with it's approved mitigated access utilizes portions of the Limited Secondary Highway (Sloan Canyon Road) and qualifies for B&T Credits under the Castaic Benefit Area. Removing the Limited Secondary Highway designation would negatively affect the approvals protected under the Subdivision Map Act. The Castaic Area Town Council and the LA County Department of Regional Planning are required and obligated to protect previously approved projects prior to the formation of the Castaic Area CSD Ordinance (in addition to it's approved conditions), whereby it's approved conditions specifically includes offsite access improvements cost within the Castaic Benefit Area commonly known as the Limited Secondary Highway designation area on Sloan Canyon Road. This tract (in addition to a vast area) are all a part of the Castaic Area B&T District and subject to the provisions of it's ordinance.

Together all approved conditions of the approved Vested Tract Map #47807, CUP #89213, OTP #89213 and the approved Mitigated Negative Declaration of which LA County is the lead agency, collectively together are one in the same. For the Castaic Area Town Council to recommend it's endorsement to LA County to remove the Limited Secondary Highway designation from Sloan Canyon Road is an infraction of the CSD Ordinance of which they created.



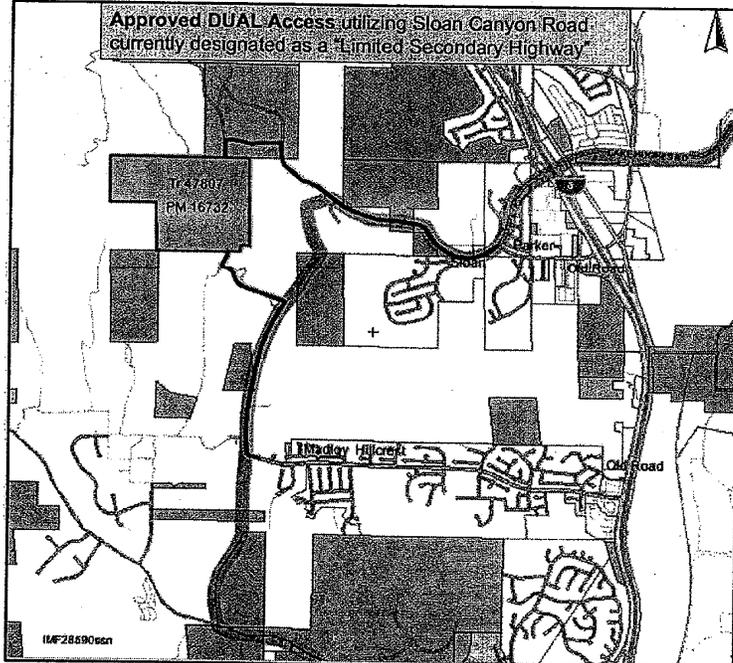
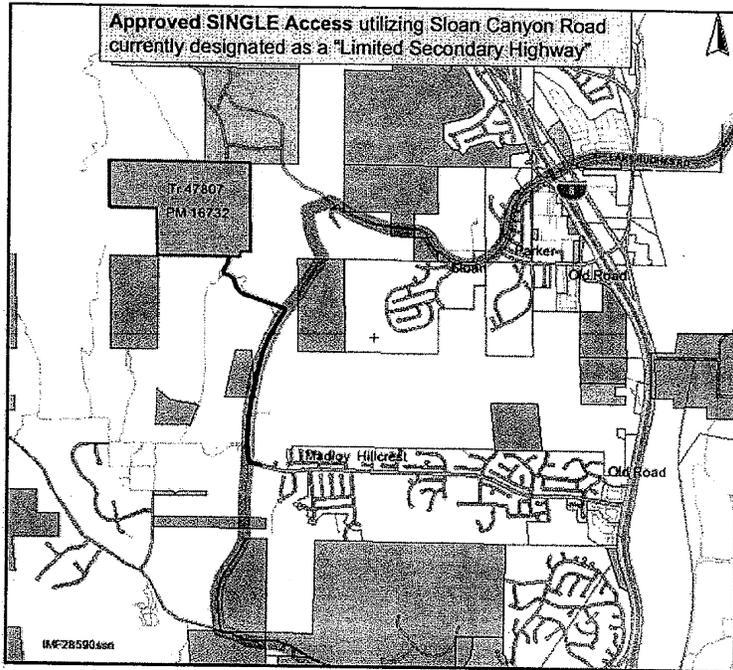
Shown in the illustration is the reference Castaic Benefit Area, which is the Sloan Canyon Limited Secondary Highway.

11/19

The two illustrations below show the approved conditions of access for both "Single and Dual Access", both of which utilizes a portion of Sloan Canyon Road.

Please refer to the attached "approved and agreed upon "Changed Conditions".

Tract 47807 and its approved conditions utilizing the Secondary Limited Highway of Sloan Canyon roadway are one in the same and can not be separated. Tract 47807 is grandfathered prior to the formation of the CSD and so are the conditions in which its access is approved utilizing a roadway designated whether it is a major or a Limited Secondary Highway.



12/19

Fact #7: Formation of the Castaic Area CSD: During the formation period of the Castaic Area CSD, in March of 2004 the Castaic Area Town Council sought permission from LA County to remove the Limited Secondary Highway designation of Sloan Canyon Road and was denied. The request today to remove the designation is an attempt to take another bite out of the apple and should be again denied.

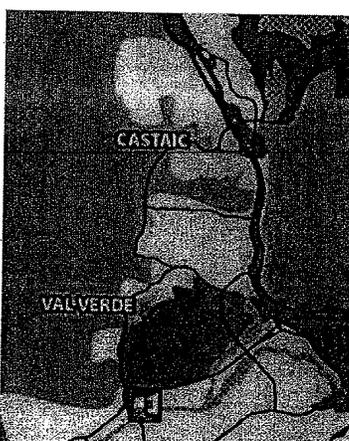
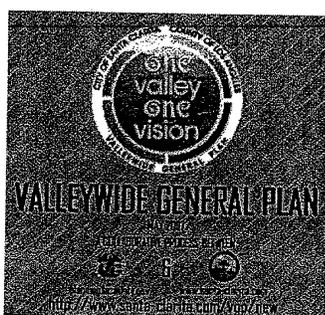
On November 30, 2004, the Board Of Supervisors adopted the Castaic Area CSD ordinance, of which on December 30, 2004 it became effective, where on January 20, 2007 it was ordained as District #29 within Section 1 of Title 22. Within the period of all three dates defined above, Sloan Canyon Road was a part of the Castaic Area Benefit District. To this day, this Sloan Canyon Road is defined on the LA County Master Highway Plan as a Limited Secondary Highway.

Prior to the Castaic CSD adoption by the Board of Supervisors dated 11-30-2004, in March of 2004 a public hearing was schedule and held to consider approval of the CSD. On March 24, 2004 The Castaic Area Town Council submitted a letter to LA County Regional Planning requesting Sloan Canyon Road (between Hasley Canyon Road and Mandoline) be designated as a local road and removed with the current designation of a Limited Secondary Highway. That request was denied! When the CSD Ordinance was approved in November of 2004 it became subject to the Limited Secondary Highway designation of Sloan Canyon Road and subject to the existing Castaic Benefit Area District. This has set a clear precedence established in approval by the Board Of Supervisors.

Yet the same 2004 CATC letter and request is being referenced today and the Castaic Area Town Council has not demonstrated it has full community support, nor has it demonstrated that it has the right to request such change as defined within the intent of it's by-laws as well as the defined provisions within the CSD ordinance. It appears that the Castaic Area Town Council acknowledges the project in VITM #47807 is exempt and grandfathered, but has overlooked the fact that those approved conditions are exempt and grandfathered as well.

To remain consistent with the provisions of the CSD, the Castaic Area Town Council should endorse and recommend to LA County Regional Planning for (1) the Limited Secondary Highway designation is to remain, and (2) endorse and recommend that the Amended 2009 Castaic B&T District be revised to where this entire Sloan Canyon Roadway be placed back into the Castaic Benefit Area. Given the information above, as well as the facts defined in Fact #1 where LA County acknowledges 41% of the 1992 Castaic Benefit Area has been funded (\$10,600,410) toward this exact roadway improvements is a very reasonable request.

Further, such endorsement and recommendations would then be consistent with the Castaic Area wide roadway circulation as published by LA County in this 2007 OVOV brochure.

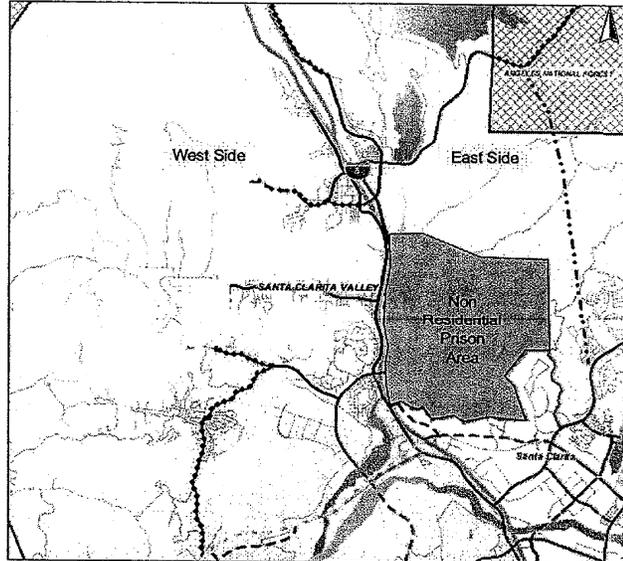


Fact #8: The Castaic Area Town Council has proposed a request for the planners of LA County to establish on the draft amended OVOV Santa Clarita Valley General Plan for the area wide highway circulation to include a new north-south Limited Secondary Highway alignment located somewhere on the east side, claiming the future need for a secondary access is essential.

Yet, at the same time, the CATC is recommending it's support to remove the current area wide Secondary Limited Highway circulation designation on the west side. within an area that today desperately needs secondary access for it's current and future residential population.

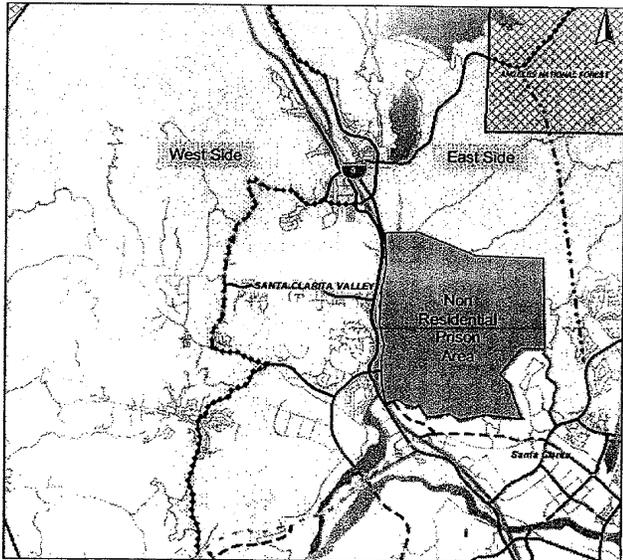
While I am not sure what the percentages are exactly, it appears the current population of Castaic consist of about 80% plus on the west side of I-5 and 20% (minus) on the east side.

Where is the rational here?



Given the limited population of the designed projects on the east side, such proposal to support the improvements for a Limited Secondary Highway is questionable when considering both the current and future potential population located on the West Side. Point in case is, If the CATC deems a a need for secondary access in the future on the east side with limited population, just how can they possibly justify removing the Secondary Limited Highway designation on the West Side, where the population today far exceeds what the east side would bring.

This CATC East Side proposal would only have merit, if the same CATC supports area wide roadway circulation that includes both sides as shown. For forty some years, Sloan Canyon Road has been designed as the area wide roadway circulation on the West Side and all whom have bought land and homes have relied upon such future improvement.



Fact #9: The community of Castaic is undergoing evaluation for a High School site. There are four locations of which are classified as acceptable sites, all of which are subject to the "Alternative site comparisons" during the CEQA EIR process. The current alignment and it's Secondary Limited Highway designation of Sloan Canyon Roadway is a key area wide roadway circulation alignment that benefits any and all of the four locations as well as the entire community of Castaic for area wide circulation. In this case, one shoe fits all!

**Santa Clarita Valley
Area Plan
Master Plan of Trails**

The OVOV illustration on the right defines the Master Plan of Trails. This Master plan appears to be the best overall area wide circulation plan published for the community of Castaic.

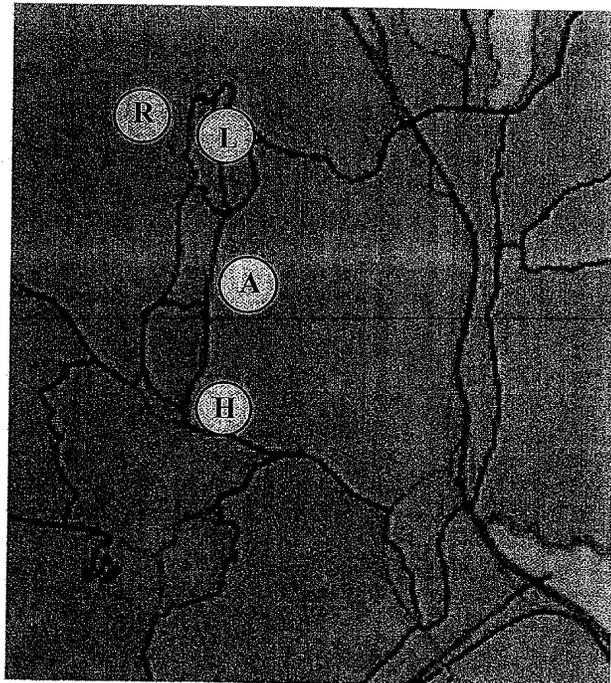
As with any well-planned community, area wide roadway circulation is the key and heart of a community, a village, a township or a region.

Using this trail plan, when one includes consideration of a high school site that is to service the entire community with convenience from all sectors, the area wide circulation elements even become more clear.



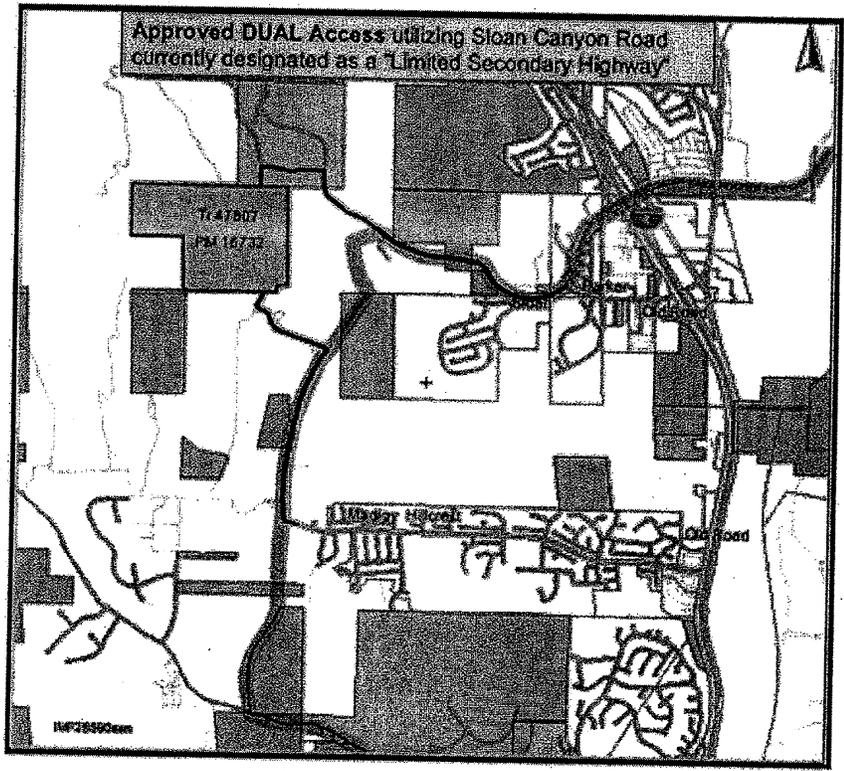
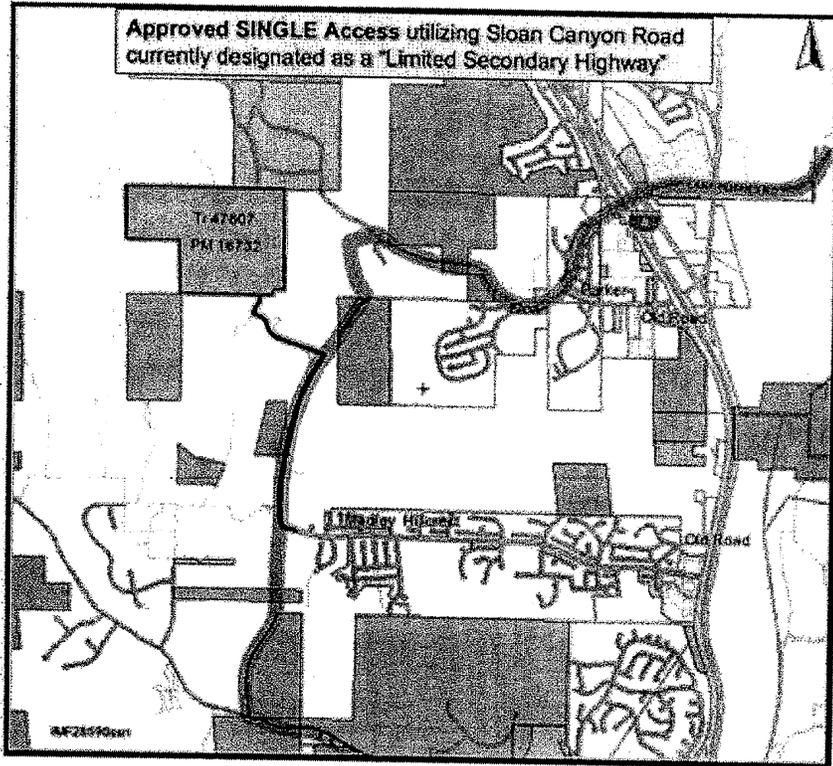
Shown are the four possible locations for a Castaic High School site and the common key area wide circulation element for all four locations are the regional improvements of Sloan Canyon Road. If a population overlay was included in this illustration, it would further highlight the importance of Sloan Canyon road.

In my opinion, it would appear that any proposal that entails some type of compromise that excludes any portion of this entire Sloan Canyon roadway will short change the regional area wide benefits to best serve both the community and Hart District.



- R** Rasmussen Romero School site
- L** Lombardi Sloan School Site
- A** Archdiocese School Site
- H** Hasley/Sloan School Site

Tr # 47807 Project Changes / Conditions due to Environmental Evaluations 1991

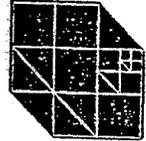


16/19

Los Angeles County
DEPARTMENT OF
REGIONAL PLANNING
320 West Temple Street
Los Angeles
California 90012
974-6411
James E. Hart, AICP
Planning Director

November 19, 1991

Sikand Engineering Association
15230 Burbank Blvd.
Van Nuys, CA 91411
Attn: Matt Beneviste



PROJECT CHANGES/CONDITIONS
DUE TO ENVIRONMENTAL EVALUATION

Project 89213/TR 47807

The Department of Regional Planning staff has determined that the following conditions or changes in the project are necessary in order to assure that there will be no substantial evidence that the proposed project may have a significant effect on the environment:

Prior to alteration of any streambeds, and as a means of mitigating potential environmental impacts, the applicant shall enter into an agreement with the California State Department of Fish and Game, pursuant to Sections 1601 through 1603 of the State Fish and Game Code.

As a means of mitigating potential environmental impacts, the applicant shall agree to suspend construction in the vicinity of a cultural resource encountered during subsurface development of the site, and leave the resource in place until a qualified archaeologist can examine them and determine appropriate mitigation measures. The applicant shall agree to comply with mitigation measures recommended by the archaeologist and approved by the Department of Regional Planning.

Before any discharge of dredged or fill material into waters of the United States or if the project may effect an endangered species, the applicant may be required to apply for a Department of Army Permit pursuant to section 404 of the Clean Water Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act to the United States Army Corps. of Engineers Los Angeles District Branch.

The applicant shall comply with all requirements of the County Code and the Subdivision Committee which mitigate potential impacts due to hydrological characteristics of the project site as identified in the Initial Study. This shall be ensured and monitored through the filing of the appropriate development permits with the Department of Public Works.

The applicant shall comply with all requirements of the County Code and the Subdivision Committee which mitigate potential impacts due to geotechnical characteristics of the project site as identified in the Initial Study. This shall be ensured and monitored through the filing of the appropriate development permits with the Department of Public Works.

Per the County Fire Department letter of July 12, 1990 regarding the Oak Tree Permit, the following is required:

1. All oak trees to be retained must be fenced at dripline plus five (5) feet prior to and during construction with chin link fencing of not less than four (4) feet in height. Fencing must be approved by a County Forester before grading is to begin.
2. All trenching within the dripline or ten (10) feet of the trunk, whichever is greater, of any oak tree to be retained shall be accomplished with the use of hand tools or small hand powered equipment.
3. All roots to be cut shall be properly pruned and sealed under the supervision of a tree expert acceptable to the Director of Regional Planning.
4. No planting or irrigation system shall be installed within the dripline of any established oak tree that will be retained.
5. The parking, storage or use of equipment shall be limited to that area outside the dripline of each oak tree. No temporary structure shall be placed within the dripline of any oak tree.
6. All replacement trees shall be planted on fill or native undisturbed soil. Planting of heavily compacted fill shall be accompanied by auguring a minimum of five (5) feet into the fill and extracting the soil. The soil will be amended with enriched soil conditioners and used to plant the replacement trees.
7. All oak trees to be removed shall be replaced at the ration of two (2) 15-gallon or larger, specimen in size, one inch or more in diameter one (1) foot above the base, with trees of the oak genus for each tree removed.
8. Replacement trees shall be properly maintained for a period of two (2) years and replaced by the permittee if mortality occurs within that period. These trees should receive regular watering throughout the replacement period. This can be accomplished by manual means or by the installation of an appropriate (drip or low-flow) irrigation system. All watering should be done so as to wet the entire root zone.

To mitigate traffic impacts, the applicant shall follow the February 12, 1990 recommendations of Public Works Namely:

Access to the project would be on Romero Canyon Road via Parker Road north of the project and on Romero Canyon Road via Sloan Canyon Road and Madloy Street south of the project. Each of these routes would require construction of off-site roadways. The majority of the project's trips would be oriented to the I-5 Freeway interchanges at Lake Hughes Road and Parker Road. In the event that the Romero Canyon Road/Parker Road connection is not constructed, the study also analyzes single access alternative to the south of the project utilizing the Sloan Canyon Road and Madloy Street route.

We agree with the report that additional roadway improvements will not be required if both the north and south access routes are opened with this project. However, if the project is constructed with only the single southerly access, the traffic study is based on the following roadway improvements being in place with this project and other related projects.

At the Backer Road/I-5 southbound ramps, provide an eastbound right-turn lane, and a second westbound through lane.

At the Old Road/Backer Road intersection, provide a northbound left-turn lane and a second through lane, provide southbound dual left-turn lanes, and provide a westbound left-turn lane and a second through lane.

We agree with the single access study that with these additional roadway improvements, the circulation system would adequately handle the traffic generated by this project and other nearby related projects. We, therefore, recommend that this project be approved provided that no building permits be issued until these improvements are constructed.

We also recommend the following mitigation measures be made a condition of approval of this project for both access alternatives.

Enter into a secured agreement with this department to pay for pro rata shares of the cost to install traffic signals when needed at the following intersections. The developer should determine his proportionate share and submit this information to this Department for review and approval. Traffic signals should only be installed when the actual volumes warrant the signals.

Letter No. D62

Letter from Eugene Lombardi, December 4, 2010

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road and refers to an attachment. The commenter states that his current correspondence to the Regional Planning Commission (RPC) is a supplement to his correspondence to the RPC dated October 8, 2009.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment, as well as economic, social or political issues that do not appear to relate to any physical effect on the environment. The comments and the attachment only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

PETITION

To Los Angeles County Regional Planning Commission and
Department of Regional Planning

Re SCV Area Plan Update, Project No. R2007-01226-(5)
Lechler Ranch in Oak Canyon, APN 3247-028-007, 008,
009 & 010; 3247-035-003 & 004; 3247-010, 011 & 020
036

I own an interest in the above-described property. I hereby
request that it be excluded from the proposed SEA district.

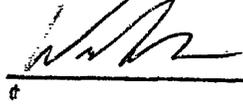
Most of the ranch is steep and rugged, with wide floodplains;
a large part could not be developed under existing regulations.
It has been used for cattle grazing and honey production, and
there is an oil field on high ground to the east. I do not
recall ever seeing red-footed frogs on the ranch.

Density and slope restrictions, together with subdivision,
floodplain, grading, Health Department and EPA regulations,
can adequately protect plants and wildlife that survived
after a wildfire devastated the ranch several years ago.

As discussed in previous letters and testimony by my family,
SEA designation brings up questions about constitutional rights
of property owners. Permitted uses are not clearly spelled out
and appear to be left up to arbitrary decisions by the SEA
board. Conditions on the ranch do not warrant this extremely
restrictive designation.

1

Maureen Davidheiser, PO Box 2692, Glendale, AZ 85502 11/29/10
Trustee, Maureen Davidheiser Trust and Partner, Lechler Ranch LLC

 27 E. FRENZING LANE, ALHAMBRA CA 92052 12/3/10

Letter No. D63

Letter from Maureen Davidheiser, December 5, 2010

Response 1

The commenter requests that her property be excluded from the proposed Santa Felicia Significant Ecological Area (SEA). The commenter states that most of her property is steep and rugged, with wide floodplains, and that a large part of her property could not be developed under existing regulations. The commenter also states that her property has been used for cattle grazing, honey production, and oil production, that she has not observed red-footed frogs on her property, and that existing regulations can adequately protect plants and wildlife. Finally, the commenter expresses the opinion that the proposed SEA brings up questions about constitutional rights, as permitted uses are not clearly spelled out and appear to be left up to arbitrary decisions by the SEA board.

The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. With regard to the proposed Santa Felicia SEA, Section 3.7, Biological Resources, of the Revised Draft EIR, sets forth the original eight criteria used to designate SEA's in the 1976 Los Angeles County SEA Study (pg. 3.7-12 to 3.7-13). Section 3.7 also describes the proposed Santa Felicia SEA, and that description explains the basis for the proposed Santa Felicia SEA and the criteria used to designate the proposed Santa Felicia SEA (pg. 3.7-23 to pg. 3.7-26). With regard to permitted uses in an SEA, Section 22.56.215 of the County Zoning Ordinance does not specify permitted uses in an SEA because permitted uses are determined by the underlying zoning classification (see, for example, Part 3 of Chapter 22.24 of the County Zoning Ordinance for a list of permitted uses in the A-2 Heavy Agricultural Zone). Instead, Section 22.56.215 of the County Zoning Ordinance requires a Conditional Use Permit (CUP) for development in an SEA (except when such development is exempt pursuant to Section 22.56.215.C of the County Zoning Ordinance) "in order to protect resources contained in significant ecological areas and in hillside management areas as specified in the county General Plan from incompatible development, which may result in or have the potential for environmental degradation and/or destruction of life and property. In extending protection to these environmentally sensitive areas, it is intended further to provide a process whereby the reconciliation of potential conflict within these areas may equitably occur. It is not the purpose to preclude development within these areas but to ensure, to the extent possible, that such development maintains and where possible enhances the remaining biotic resources of the significant ecological areas, and the natural topography, resources and amenities of the hillside management areas, while allowing for limited controlled development therein." The County disagrees that the CUP process is arbitrary, as Section 22.56.040 of the County Zoning Ordinance specifies the burden of proof for a CUP and Section 22.56.215.F

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

of the County Zoning Ordinance specifies the burden of proof for a CUP for development in an SEA. Furthermore, Section 22.56.090 of the County Zoning Ordinance grants CUP approval authority to the Hearing Officer, not the Significant Ecological Area Technical Advisory Committee (SEATAC). As provided in Section 22.56.215.H of the County Zoning Ordinance, the Director must provide a report and recommendation to the Hearing Officer when a CUP for development in an SEA is to be considered and “(T)he director, in developing such a report and recommendation, will consult with appropriate agencies and will compile the recommendations and comments of such agencies, including any recommendation of SEATAC.”

1/1

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center; we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1

1.	JACK E COE	18940 CEDAR VALLEY WAY	<i>Jack E Coe</i>	12/2/2010
	NAME	ADDRESS	SIGNATURE	DATE
		NEWHALL, CA 91321		

2.				
	NAME	ADDRESS	SIGNATURE	DATE

3.				
	NAME	ADDRESS	SIGNATURE	DATE

4.				
	NAME	ADDRESS	SIGNATURE	DATE

5.				
	NAME	ADDRESS	SIGNATURE	DATE

6.				
	NAME	ADDRESS	SIGNATURE	DATE

7.				
	NAME	ADDRESS	SIGNATURE	DATE

8.				
	NAME	ADDRESS	SIGNATURE	DATE

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1.

NAME	JOHN CAMPHOUSE	ADDRESS	SIGNATURE
DATE	11-28-2010	5166 FINETHILL AVE. LACRESCENTA, CA 91214	

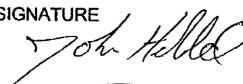
2.

NAME	ERIN CAMPHOUSE	ADDRESS	SIGNATURE
DATE	11-28-2010	5166 FINETHILL AVE. LACRESCENTA, CA 91214	

3.

NAME	Debra Colicci	ADDRESS	SIGNATURE
DATE	11-28-2010	33450 San Gabriel Acton CA 93510	

4.

NAME	John Herbold	ADDRESS	SIGNATURE
DATE	11-28-10	9932 Sunland BL. Sunland CA. 91040	

5.

NAME	Rosie GUTIERREZ	ADDRESS	SIGNATURE
DATE	11/30/10	3627 CRESTMONT L.A CA 90026	

6.

NAME	Michele Adamson	ADDRESS	SIGNATURE
DATE	11/30/10	10233 Langmuir Ave Sunland CA 91040	

7.

NAME	Jennifer Patterson	ADDRESS	SIGNATURE
DATE	11/30/10	1377 Hilda Ave Glendale 91205	

8.

NAME	Sue OGrady	ADDRESS	SIGNATURE
DATE	11/30/10	2718 Osman St Camarillo, CA 93016	

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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1. NAME *Tina Caldwell* ADDRESS *PO Box 10429 Burbank, CA 91510* DATE *11.28.10* SIGNATURE *Tina Caldwell*
2. NAME *NINA WERCHOWSKY* ADDRESS *923 N. KEMP ST BURBANK, CA* DATE *11/28/10* SIGNATURE *Nina Werchowsky*
3. NAME *Betsy Custer* ADDRESS *6445 Danette St Simi Valley CA 93063* DATE *11/28/10* SIGNATURE *Betsy Custer*
4. NAME *Suzanne Peterson* ADDRESS *18801 Tribune St Northridge 91326* DATE *11-28-10* SIGNATURE *Suzanne Peterson*
5. NAME *Sally Chew* ADDRESS *712 N. Ontario St Burbank CA 91505* DATE *11-28-10* SIGNATURE *Sally Chew*
6. NAME *Alexia Loehd* ADDRESS *12301 1/2 wedding st. Valley Village, Ca. 91607* DATE *11-28-10* SIGNATURE *Alexia Loehd*
7. NAME *Shary Billings* ADDRESS *2309 W. Verdugo Burbank 91506* DATE *11-28-10* SIGNATURE *Shary Billings*
8. NAME *Myung Chung* ADDRESS *2922 S. Beverly DR. LA CA 90034* DATE SIGNATURE *Myung Chung*

1/1

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As residents of the San Francisquito Canyon watershed in the City of Santa Clarita, we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road as proposed by the One Valley One Vision Highway plans. It would offer no benefit to homes in our North park development since it would not change our access/egress onto Copper Hill Drive. The Mc Bean extension would be directly behind the homes on Calex drive increasing noise and pollution. Further, this extension would harm the rural nature of the canyon, destroying habit and view-points. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. Kristen Mayberry 27859 Berkshire Pl. [Signature] 11/28/10
NAME ADDRESS SIGNATURE DATE

2. Jeff Mayberry 27859 Berkshire Pl. [Signature] 11/28/10
NAME ADDRESS SIGNATURE DATE

3. _____
NAME ADDRESS SIGNATURE DATE

4. _____
NAME ADDRESS SIGNATURE DATE

5. _____
NAME ADDRESS SIGNATURE DATE

6. _____
NAME ADDRESS SIGNATURE DATE

7. _____
NAME ADDRESS SIGNATURE DATE

8. _____
NAME ADDRESS SIGNATURE DATE

Letter No. D64

Letter from Jack E. Coe, December 2, 2010

Response 1

The commenter petitions for removal of the proposed extension of McBean Parkway onto San Francisquito Canyon Road from the Master Plan of Highways. The commenter states that the extension would direct traffic onto the equestrian crossing and would encourage higher traffic speeds endangering riders, horses, and vehicle occupants.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

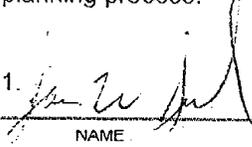
The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

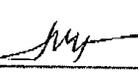
Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

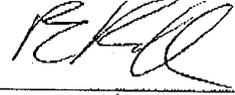
2/12

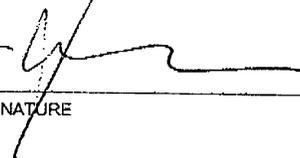
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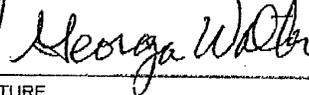
1.  5 Arroyo Cir
 21415 Newton Ct James W Rusch 12/3/10
 NAME ADDRESS SIGNATURE DATE

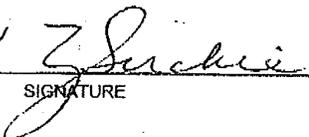
2. John Morgan 25319 Ivy Lane
 S. Ranch 91381  12/3/10
 NAME ADDRESS SIGNATURE DATE

3. Brian Rollas 27502 Wellbly Way
 Valencia  12-3-10
 NAME ADDRESS SIGNATURE DATE

4. Hal Crossman 28318 Alley Court
 Santa Clarita  12/03/10
 NAME ADDRESS SIGNATURE DATE

5. JERYLE WALTER 27493 BRIDGEWAY VAL. CA 91359  12-3-10
 NAME ADDRESS SIGNATURE DATE

6. Georga Walter 27493 ^{Valencia Pl} ~~Br. Deywater~~
 12/3/10
 NAME ADDRESS SIGNATURE DATE

7. Mary Sirchia 24339 ^{Valencia} ~~Foxglove~~
 91354  12/3/10
 NAME ADDRESS SIGNATURE DATE

8. Thomas Sirchia 24339 Foxglove  12/3/10
 NAME ADDRESS SIGNATURE DATE

3/12

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1. Karla Frielhaut 28620 Apricot Saugus 91390 [Signature] 12/3/10
NAME ADDRESS SIGNATURE DATE

2. JUAN BROOKS 23907 Bno Ct Santa Clarita 91354 [Signature] 12-3-10
NAME ADDRESS SIGNATURE DATE

3. Steve Durbaut 28620 Apricot Place Saugus 91390 12/3/10
NAME ADDRESS SIGNATURE DATE

4. JOAN CAPER 29331 VIA ESTANCA VALENCIA CA 91354 12/13/10
NAME ADDRESS SIGNATURE DATE

5. Karin Gannon 6107 Gosney Sr 93063 [Signature] 12/5/10
NAME ADDRESS SIGNATURE DATE

6. Gloria Daffern 10945 Odell Gloria Daffern 12-5-10
NAME ADDRESS Sunland 91040 SIGNATURE DATE

7. Shannon Birtle 812 Osage St. [Signature] 12-5-10
NAME ADDRESS Sunland 91044 SIGNATURE DATE

8. Juan Quiñonez 4221 DUNSMORE AVE [Signature] 12-5-11
NAME ADDRESS San Jose CA 95128 SIGNATURE DATE

4/12

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1. JENNIFER HORTON 4502 W. Hollywood Blvd
NAME ADDRESS SIGNATURE DATE
LONG BEACH, CA 90407

2. Victor Helton 8041 Zee Anne Way
NAME ADDRESS SIGNATURE DATE
Encino CA 91214

3. Susan Keger 5220 Melrose Ave
NAME ADDRESS SIGNATURE DATE
Hollywood CA 90048

4. CHRIS RASTIAN 2029 VERDUGO BL.
NAME ADDRESS SIGNATURE DATE
Van Nuys CA 91411

5. Arto Erian 2829 Waverly Dr
NAME ADDRESS SIGNATURE DATE
LA CA 90039

6. Pres Ott Long 14844 HAGUER ST MISSION HILLS
NAME ADDRESS SIGNATURE DATE
CA 91367

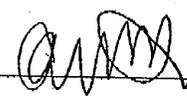
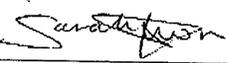
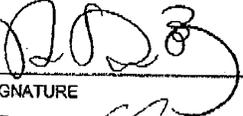
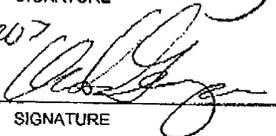
7. DANIT D. MAKOVER 12747 DUNNARD ST
NAME ADDRESS SIGNATURE DATE
N. HOLLYWOOD, CA 91606

8. YAHUDA IAGHI 12387 Sylvan St
NAME ADDRESS SIGNATURE DATE
N. HOLLYWOOD 91606

5/12

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1. Samantha Heer 4831 Indianola Way  12/05/10
 NAME ADDRESS SIGNATURE DATE
 La Canada CA 91011
2. Caroline Heer 4831 Indianola way  9 Dec 10
 NAME ADDRESS SIGNATURE DATE
 La Canada CA 91011
3. Sarah Kwon 1848 W. 22nd St. LA, CA 90018  12/05/10
 NAME ADDRESS SIGNATURE DATE
4. James Kwon 1848 W. 22nd St. LA, CA 90018  12/05/10
 NAME ADDRESS SIGNATURE DATE
5. Jenni Kwon 1848 W. 22nd St. LA, CA 90018  12/05/10
 NAME ADDRESS SIGNATURE DATE
6. Christina Georgijan 1437 Rimercrest Dr.  12/15/10
 NAME ADDRESS SIGNATURE DATE
 Glendale, CA 91207
7. Magdalena Rastian 2384 Barton Ln  12/5/10
 NAME ADDRESS SIGNATURE DATE
 Menlo Park CA 94027
8. Milton Gomez 28435 Mirabella  12/5/10
 NAME ADDRESS SIGNATURE DATE
 Sunburst CA 91350

6/12

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1. Yvonne Quiñonez 4221 Dinsmore Ave. Yvonne Quiñonez 12-5-10
NAME ADDRESS SIGNATURE DATE

2. Diane Holmes 15730 Sandycreek Lane Diane Holmes 12-5-10
NAME ADDRESS SIGNATURE DATE

3. LORI Turner 24173 Avenida Crescenta Lori Turner 12/7/10
NAME ADDRESS SIGNATURE DATE

4. Camille Holmes 23904 Doubletree Ct. Camille Holmes 12/5/10
NAME ADDRESS SIGNATURE DATE
Way Castaic

5. Shannon Burrous 21647 Farmington Ln Shannon Burrous 12/5/10
NAME ADDRESS SIGNATURE DATE

6. Mike Traweek 21647 Farmington Ln Mike Traweek 12/5/10
NAME ADDRESS SIGNATURE DATE

7. Chris Helms 29996 Ave of the Oaks Chris Helms 12/1/10
NAME ADDRESS SIGNATURE DATE

8. TAMMI WYCKOFF 8126 CORA ST Tammi Wyckoff 12/5/10
NAME ADDRESS SIGNATURE DATE

7/12

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1. Mike Campbell 28472 Monterey M Campbell 12-5-10
NAME ADDRESS SIGNATURE DATE

2. Susan Crabtree 5009 Shannon View Rd. Susan J. Crabtree 12-5-10
NAME ADDRESS SIGNATURE DATE

3. Jerome Joseph 5700 Brookside Dr. Arroyo Trx 76026 JJ 12-5-10
NAME ADDRESS SIGNATURE DATE

4. William Johnson 12055 Louise Ave Granada Hills 91344 W Johnson 12-5-10
NAME ADDRESS SIGNATURE DATE

5. Barry Petersea Northridge 91326
18801 Tribune St Barry Petersea 12-5-10
NAME ADDRESS SIGNATURE DATE

6. John Chew 712 N. Ontario St., Burbank 91505 John Chew 12-5-10
NAME ADDRESS SIGNATURE DATE

7. Kelly MacMillin 28132 Oak Springs, Cy Chy Kelly MacMillin 12-5-10
NAME ADDRESS SIGNATURE DATE

8. Benjamin Lantman 5576 Babcock Ave Benjamin Lantman 12-5-10
NAME ADDRESS SIGNATURE DATE

8/12

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1. Julie Murray P.O. Box 802241 Valencia, CA *Julie Murray* 12-5-10
 NAME ADDRESS SIGNATURE DATE

2. Cecilia Kikabo P.O. Box 802241 Valencia, CA *Cecilia Kikabo* 12-5-10
 NAME ADDRESS SIGNATURE DATE

3. TONY MURRAY 17806 PLUMMER ST. *Tony Murray* 12/5/10
 NAME ADDRESS SIGNATURE DATE

4. Joni Lautman 5516 Babcock *Joni Lautman* 12-5-10
 NAME ADDRESS SIGNATURE DATE

5. Rob FAUQUIER 20029 DOROTHY ST *Rob Fauquier* 12-5-10
 NAME ADDRESS SIGNATURE DATE

6. Maria Fauquier 20029 Dorothy St. *Maria Fauquier* 12-5-10
 NAME ADDRESS SIGNATURE DATE

7. Donna Herrin 3738 Third Ave, 91214 *Donna L. Herrin* 12-5-10
 NAME ADDRESS SIGNATURE DATE

8. Shirley Huefner 5833 Camellia Ave *Shirley Huefner* 12-5-10
 NAME ADDRESS SIGNATURE DATE
 (Simplicity, CA 91750)

9/12

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As a parent of a child, or an adult rider, who participates in horseback riding lessons, pleasure riding and trail rides at Don-e-brook Farms equestrian center, we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road. The proposed extension would threaten rider's safety when riding horses to and from the arena and trails on the West side of San Francisquito Canyon Road. Currently, San Francisquito Canyon Road is a rural, winding road which causes drivers to slow. The proposed extension route would direct traffic directly onto the equestrian crossing and would encourage higher traffic speeds imperiling riders, horses and vehicle occupants. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. Ana Rojas 28435 Marbella CA 91350 12/5/10
NAME ADDRESS SIGNATURE DATE

2. Justin Yukin 6958 Nangle Ave N Hollywood CA 91605 12/5/10
NAME ADDRESS SIGNATURE DATE

3. Aram Gevorgian 1932 W. M. East 91207 12/5/10
NAME ADDRESS SIGNATURE DATE

4. Keith Jaeger 10551 Parr Ave Sunland 91040 Keith Jaeger 12/5/10
NAME ADDRESS SIGNATURE DATE

5. Ralph Tempas 14844 Hagar St LA 91345 12/5/10
NAME ADDRESS SIGNATURE DATE

6. Diane Tempas 14844 Hagar St LA 91345 12/5/10
NAME ADDRESS SIGNATURE DATE

7. Peter W. [unclear] 8126 Cora St Sunland 12/5/10
NAME ADDRESS SIGNATURE DATE

8. Johnny Mitri 4313 Alta Canada 91114 12/5/10
NAME ADDRESS SIGNATURE DATE

10/12

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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1. Karen Rodriguez 3004 No. Burnside St. Burbank CA 91504 12/5/2010

2. Linda Garcia 5249 Townsend Ave Burbank CA 91504 12-5-10

3. Ann Howard 536 Cambridge Dr Burbank CA 91504 12/5/10

4. Tiffany Arzalone P.O. Box 1238 Proser Park 93225 12/5/10

5. Shirley Gray P.O. Box 1238 Proser Park 93225 12/5/10

6. Ronda De La Cruz P.O. Box 1238 Proser Park 93225 12/5/10

7. Luisa De La Cruz P.O. Box 1238 Proser Park 93225 12/5/10

8. Frederick Kahn 20342 Highpoint Pl Canyon City, 91351 12/5/10

11/12

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

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1. Eric Heer 4831 Indwanda Way Lancaster, CA 91011 [Signature] 12/5/10
 NAME ADDRESS SIGNATURE DATE

2. Tiffany McGee 13419 Canopus Drive, Kagel Canyon, CA, 91342 [Signature] 5th Dec. '10
 NAME ADDRESS SIGNATURE DATE

3. Jeff Edelstein 6930 Timber Hollow [Signature] 12/5/10
 NAME ADDRESS SIGNATURE DATE

4. Michele Edelstein 6930 Timber Hollow Moorpark, CA [Signature] 12/5/10
 NAME ADDRESS SIGNATURE DATE

5. Barry Petersen 18801 Tribune St. Porter Ranch, CA 91326 [Signature] 12/5/10
 NAME ADDRESS SIGNATURE DATE

6. John Bock 30553 N. Beryl Pl Castaic, CA 91384 [Signature] 12-5-10
 NAME ADDRESS SIGNATURE DATE

7. Charlene Sarnecki 20504 Romar Ln Saugus CA 91358 [Signature] 12/5/10
 NAME ADDRESS SIGNATURE DATE

8. Jean Burke 8412 Oswego St Burbank CA 91542 [Signature] 12/5/10
 NAME ADDRESS SIGNATURE DATE

12/12

PETITION TO THE COUNTY OF LOS ANGELES TO REMOVE THE PROPOSED EXTENSION OF Mc BEAN PARKWAY (FROM COPPER HILL DRIVE NORTH TO SAN FRANCISQUITO CANYON ROAD) FROM THE SANTA CLARITA VALLEY AREA PLAN.

As residents of the San Francisquito Canyon watershed in the City of Santa Clarita, we are opposed to the extension of Mc Bean Parkway onto San Francisquito Canyon Road as proposed by the One Valley One Vision Highway plans. It would offer no benefit to homes in our North park development since it would not change our access/egress onto Copper Hill Drive. The Mc Bean extension would be directly behind the homes on Calex drive increasing noise and pollution. Further, this extension would harm the rural nature of the canyon, destroying habit and view-points. In the interest of public safety as well as good rural street design we ask that this extension be removed from the planning process.

1. Doggy Verbancik 18068 San Francisquito Canyon [Signature] 12/3/10
 NAME ADDRESS SIGNATURE DATE

2. Vance Weaver 28668 San Francisquito Canyon Saugus 91390 [Signature] 12/4/10
 NAME ADDRESS SIGNATURE DATE

3. _____
 NAME ADDRESS SIGNATURE DATE

4. _____
 NAME ADDRESS SIGNATURE DATE

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 NAME ADDRESS SIGNATURE DATE

6. _____
 NAME ADDRESS SIGNATURE DATE

7. _____
 NAME ADDRESS SIGNATURE DATE

8. _____
 NAME ADDRESS SIGNATURE DATE

Letter No. D65

Letter from Eric and Liz Ekeberg, December 2, 2010

Response 1

The commenter provides petitions for removal of the proposed extension of McBean Parkway onto San Francisquito Canyon Road from the Master Plan of Highways. The petitions state that the extension would direct traffic onto the equestrian crossing and would encourage higher traffic speeds endangering riders, horses, and vehicle occupants.

The petitions address general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community's concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.



SIKAND

December 6, 2010

Los Angeles County Regional Planning Commission
320 West Temple Street, Room 170
Los Angeles, CA 90024

Attn: Mitch Glaser

Subject: Assessor Parcel Map No 3271-005-025
Work Order: 5109-18

Engineering
Planning
Surveying

15230 Burbank Blvd., Suite 100
Van Nuys, CA 91411-3586

Tel: 818/787-8550
Fax: 818/901-7451
E-mail: info@sikand.com

Dear Mr. Glaser:

In addition to our letter of appeal (copy attached), we have additional information to supplement our request for the proposed land use from R62 to H2. The supplemental map indicates that the total Clem ownership and the southerly 40 acres (Assessor Parcel # 3271-005-025) shown as color cross-hatched on Attachment A, located in the Val Verde section of the Community Castaic Standards District (CSD). The remaining northerly portion of the Clem ownership is located in the Hasley Canyon area of the Castaic CSD which has a 2 acre minimum lot size. The allowable density is significantly higher in the Val Verde area, which permits 7,000 sq.ft. minimum lot size with a 10,000 sq.ft. average. The property is also split by Del Valle Road, which is a limited secondary highway and has infrastructure within or nearby to serve it.

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We therefore request your approval of the H2 residential zone for the 40 acre parcel. Please advise if any additional information is required.

Very truly yours,
SIKAND ENGINEERING ASSOCIATES

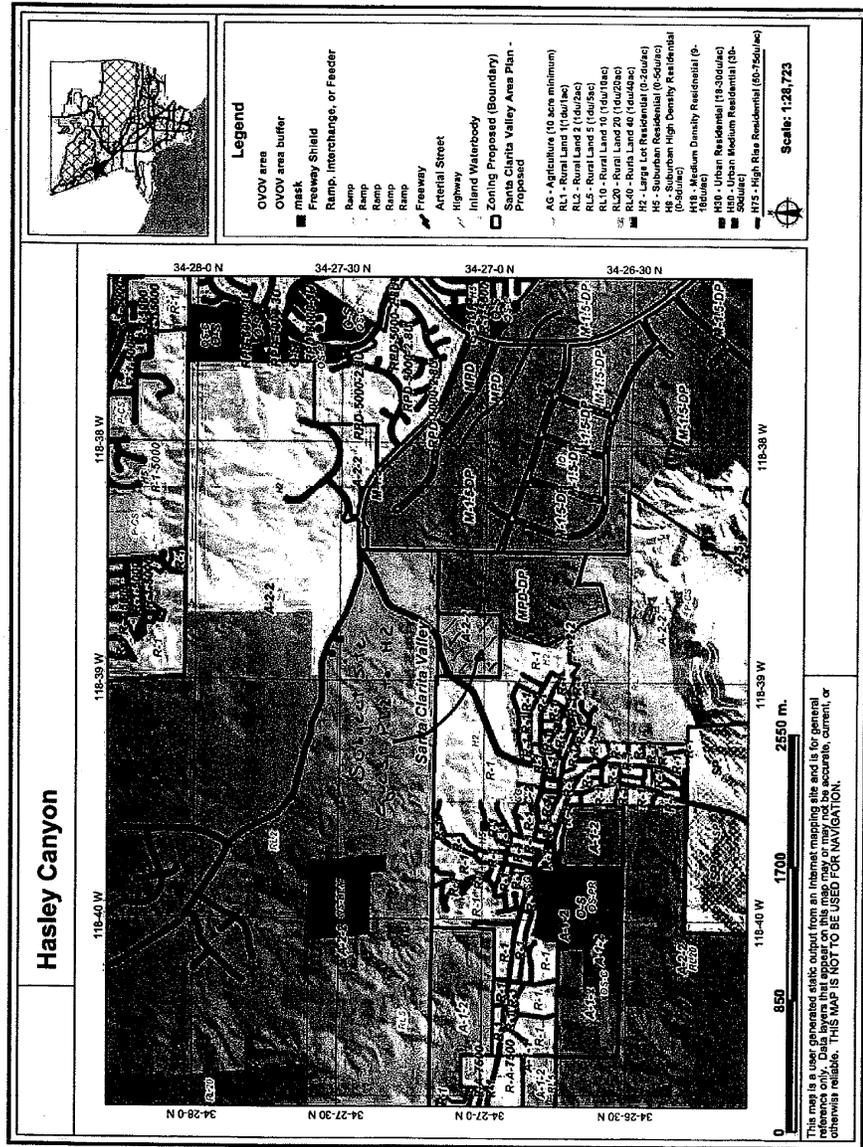

Matt Benveniste
Senior Planner

- Attachments A: Aerial exhibit showing southerly 40 acres of Clem property.
B: OVO map showing southerly 40 acres of Clem property.
C: Our letters of 9/30/2009 & 10/13/2010 with initial attachments.

Cc: Donald Clem
Joseph Clem



X:\srand\5109-018\00\Planning\Exhibits\dm9\cch for oavr Hearing.dwg - Bx14
Plotted: 12/07/10 08:43:40 By: Tot-Chiu



4/5

October 13, 2010

Los Angeles County Regional Planning Commission
320 W. Temple Street
Room 170
Los Angeles, CA 90012
Attn: c/o Mitch Glaser

SIKAND

Engineering
Planning
Surveying

15230 Burbank Blvd., Suite 100
Van Nuys, CA 91411-3586

Tel: 818/787-8550
Fax: 818/901-7451
E-mail: info@sikand.com

Re: **AMB 3271-005-025**
REQUEST TO APPEAL DETERMINATION
W.O. 5109-018

Gentlemen:

Sikand Engineering Associates is writing this letter on behalf of our client, The Saugus Properties (Donald Clem), to appeal the determination made by Regional Planning following their review of the subject site for the proposed One Valley, One Vision (OVOV). It is our position that this property which was designated as RL2 (1 dwelling unit per 2 acres) should have been designated H2 (2 dwelling units per acre). The reasons that would warrant the Commission's reversal of the above referenced decision to adjust the proposed OVOV map are as follows:

1. This parcel is adjacent to Del Valle Road, which is a Master Planned highway, a significant roadway artery that serves the Val Verde area.
2. This site falls within the Castaic Community Standards District for Val Verde. The minimum lot size for this sub-area is only 7,000 square feet minimum with an overall lot size average of 10,000 square feet. Revising the land use would put this into further compliance with the intentions of the CSD.
3. The site is situated between Tentative Parcel Map #060030, an approved map for industrial use, and Tentative Tract #066190 which is a pending residential project consisting of primarily larger lots. Therefore, the re-designation of this site to H2 would provide a logical transition from the more intense industrial development down to the larger lot ranch style development.
4. This site is in close proximity to the Valencia Commerce Center, a regional industrial base thereby allowing for minimal roadway travel to and from the workplace.

It is our position that the additional information provided above along with the attached backup provide ample grounds to reconsider the decision and endorse this map adjustment within the proposed OVOV.

Thank you for your time and consideration of this matter.

Sincerely,
SIKAND ENGINEERING ASSOCIATES


Matt Benveniste, Sr. Planner

cc: Donald Clem, Saugus Properties

Attachments: Assessor Map 3271-005-025
Aerial plat of the subject site

5/5

September 30, 2009

Los Angeles County Regional Planning Commission
320 West Temple Street, 13th Floor
Los Angeles, CA 90012
Attn: Mitch Glaser

Re: **MODIFICATION TO THE PROPOSED OVOV
WORK ORDER: 5109-018**

Commissioners:

On behalf of our client, Donald Clem who is the owner of Saugus Properties (assessor parcels 3271-005-025, 3247-032-010, 011 and 040). As recently discussed with you, we are respectfully requesting that the new One Valley One Vision General Plan (OVOV) covering assessor parcels 3271-005-025, a portion of 3247-032-040, a small portion of assessor parcel 3247-032-010 which will be bisected by the proposed realignment of Del Valle Road be modified from the current designation of RL2 to H2. In addition, we are requesting the zoning be modified as well from A-2-2 to R-1 so that it is compatible with the proposed land use. The reasons that we are requesting these changes is as follows:

1. AMB 3271-005-025 is located in the Val Verde portion of the Castaic Community Standards Districts that allows 7,000 sq. ft. minimum lot size with an average of 10,000 sq. ft. This is similar to the land to the west and south that is designated H2.
2. The above-mentioned parcels contain portions of Del Valle Road a master planned highway. This is the only location where this portion of the road is not buffered by a land use, which is not designated as urban.
3. All of these parcels would be transition zones between the existing Valencia Commerce Center Industrial Park to the east and the more rural Hasley Estates to the west.
4. These parcels are located within Tentative Tract 060665, a project that was filed on January 17, 2006.

The current General Plan allows for up to 119 dwelling units per the slope analysis. With the current proposed OVOV, that number will be reduced to only 60 dwelling units unless the requested changes are approved. The new maximum would be approximately 173 dwelling units.

Given these reasons, it appears that proper designation should be H2 rather than the RL2 as it is currently shown. Please contact us; if you have any questions, we will be happy to answer them for you.

Sincerely,
SIKAND ENGINEERING ASSOCIATES


Matt Benveniste

cc: Donald Clem, Saugus Properties

Attachments:

1. Proposed OVOV map w/requested changes
2. Assessor maps of the subject site
3. Latest Tentative Tract 60665 modified for H2 designation

Letter No. D66

Letter from Sikand, December 6, 2010

Response 1

The commenter requests that the proposed Area Plan's land use designation for Assessor's Parcel Number 3271-005-025 be changed from Rural Land 2 (RL2) to Residential 2 (H2). The commenter states that this change is consistent with the density of the surrounding area and that there is infrastructure within or nearby to serve it.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comments regarding consistency with the density of the surrounding area and regarding nearby infrastructure only express the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/7

VAN WERT, INC.
LAND USE ENTITLEMENTS CONSULTING

The Regional Planning Commission
County of Los Angeles
Hall of Records, Room 150
320 West Temple Street
Los Angeles 90012

Date: December 7, 2010

Re: Santa Clarita Valley Area Plan Update (One Valley One Vision)
RPC December 8, 2010 Hearing ~ Agenda Item #6

Members of the Regional Planning Commission:

The purpose of this letter is to oppose portions of the Santa Clarita Valley Area Plan Update (the "Area Plan Update") which needlessly restrict property rights through the effective "down-zoning" of certain parcels within the Sloan Canyon Area, currently designated as HM and N1, by assigning the RL5 land use designation. Similar opposition has been voiced by the Castaic Town Council and individual property owners¹ who disagree with the RL5 designation within a segment of the Sloan Canyon Area sometimes referred to as the "donut hole". This letter aims to (1) present arguments which illustrate that the RL5 designation is not appropriate for the "donut hole" and (2) suggest a compromise which would re-designate certain portions of the "donut hole" as RL2 (the "Proposed RL2 Re-Designation Area"). See Exhibit 1. The parcels within the Proposed RL2 Re-Designation Area, meet the same suitability criteria as other RL2 parcels, are of a similar size as other RL2 parcels, contain relatively flat, developable areas, front on Sloan or Romero Canyon Roads, are served by water lines and are just south of the proposed Castaic High School site.

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The Sloan Canyon Area should be designated RL2 NOT RL5 for the following reasons:

- The RL2 designation is consistent with the existing land use designation (HM/N1) and zoning (A-2-2) in the area,
- The RL5 designation unnecessarily restricts existing property rights with no public benefit,

¹ This letter is written on behalf of the Howells, property owners of parcels 3247-042-011 and 3247-042-012 and follows up on a February 23, 2010 letter submitted to the Commission.

2/7

- Staff has not presented data or rationale which provides a meaningful distinction between the RL5 "donut hole" and adjacent RL2 areas which justifies the "down-zoning"
- The Proposed RL2 Re-Designation Area matches adjacent RL2-designated areas in terms of the suitability criteria,
- The Proposed RL2 Re-Designation Area is well served by infrastructure and is contiguous with the highly developed area along Hillcrest Parkway,
- Changed circumstances warrant re-evaluation of land use designations near the proposed Romero Canyon school site, and
- The Hillside Management Ordinance is in place to regulate development on a micro level to ensure construction which respects the valley's unique topography.

1. The RL5 designation of the "Donut Hole" Unnecessarily Restricts Property Rights

The designation of the "donut hole" as RL5 dramatically restricts individual property rights and significantly reduces property values without a corresponding demonstration of public purpose. At present, the "donut hole" properties are designated HM and N1 with A-2-2 zoning, which would be equivalent to the RL2 land use designation. The RL5 designation proposed in the Area Plan Update would unfairly reduce development potential in this area by at least half. The RL5 designation would not improve upon or preserve the community character, as it is already low-density rural residential; it does not further protect environmental resources, and it does not respond to the desires or needs of the public, as many have expressed opposition to the RL5 designation.

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2. No Data or Rationale Has Been Provided Which Justifies the "Down-Zoning"

a. The Suitability Criteria Do Not Provide a Distinction Which Justifies the RL5 Designation.

In written and verbal conversations with Staff, the suitability criteria were noted as one of the bases for the designation of the "Donut Hole" as RL5. The Area Plan Update (page 49) describes the criteria as topography, access, proximity to infrastructure, environmental constraints, character of surrounding development, economic viability and other criteria. In Staff's response

to comments² the suitability criteria are again referenced with specific comments related to slopes, fire zone, landslide zone, liquefaction zone, flood zone and proximity to highway plan routes, utilities and infrastructure. On each of these criteria, the Proposed RL2 Re-Designation Area matches up with adjacent areas designated as RL2 in the Area Plan Update. As described below, none of these criteria is a useful indicator of suitable density and are useless in making a fine-grained determination of the appropriateness of a two-acre (RL2) versus five-acre (RL5) minimum density.

- Slopes. The parcels within the Proposed RL2 Re-Designation Area have similar topography to adjacent RL2 designated areas. The vast majority of parcels have significant areas of relatively flat, developable terrain that line the existing roadways (Romero Canyon and Sloan Canyon) and would require minimal grading for access. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.
- Access / Highway Plan Routes. Hillcrest Parkway and portions of Hasley Canyon Road are designated as Limited Secondary Highways and Sloan Canyon Road south of Hillcrest is proposed as a Limited Secondary Highway. The Proposed RL2 Re-Designation Area is as close or closer to these routes as other nearby areas designated RL2. The existing and proposed roadways are wholly adequate to service rural residential neighborhoods at an RL2 density. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.
- Utilities and Infrastructure: Sloan Canyon Road and Romero Canyon Road are served by 8" and 12" water lines respectively.³ Further, the Proposed RL2 Re-Designation Area is adjacent to Hillcrest which houses a middle school and elementary school. The Proposed RL2 Re-Designation Area is as well or better served by infrastructure than other nearby RL2 areas. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.

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² Response to Public Hearing Comments dated October 5, 2009; Response to Written Comments dated September 17, 2009.

³ Los Angeles County Waterworks District No. 36 Val Verde Water Distribution System (index map), March 2002.

4/7

- **Fire Zone.** Nearly the entire valley is similarly designated as a Very High Severity Fire Zone. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.
- **Landslide and Liquefaction Zones.** The lengths of Hasley Canyon Road and Hillcrest Parkway are designated as Liquefaction zones. Most of the Hasley Canyon and Sban Canyon areas are within liquefaction and landslide zones. The presence of these zones on a property may affect the location of construction within a site or may inform necessary mitigation measures, but need not preclude development. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.
- **Flood Zone.** Some parcels within the Proposed RL2 Re-Designation Area are traversed by a flood plain. Much of Hasley Canyon Road and other RL2 and higher density areas are also traversed by flood plains. Similar to Landslide and Liquefaction Zones, the presence of a Flood Zone does not preclude development. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.
- **Community Character.** The character of the area is already established as large-lot, rural residential. The RL5 designation does not improve the long held community objective of maintaining a rural/suburban lifestyle. An observer would not perceive the difference between the existing two acre minimum lot size (RL2) and the proposed five acre minimum (RL5). The character of both densities is perceived as a large property with a home or other structure(s) nestled among multiple acres of open space. Accordingly, this criteria cannot inform a distinction between land use designations RL2 and RL5.
- **Economic Viability.** The County's economic viability criteria may be useful in determining the viability of certain uses in specific areas – i.e. X amount of commercial development is viable in area Y – but, this criteria cannot inform a distinction between land use designations RL2 and RL5.

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b. The RL2 Designation is Also Consistent with the Area Plan Update Goals and Policies

In prior correspondence, Staff explained that it supports the existing land use designations due, in part, to their consistency with the Vision and Guiding Principles of the Area Plan Update. While I don't dispute the consistency, it is also true that re-designation of certain Sban Canyon parcels to RL2 would be similarly consistent. Further, the Management of Growth section of the Guiding

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Principles, discusses the importance of encouraging growth on the periphery or within previously developed areas. Given the adjacency of the Proposed RL2 Re-Designation Area to the already developed higher density residential development along Hillcrest Parkway, the RL2 designation is more appropriate than RL5.

c. The RL5 Designation Can Not Perceptibly Improve Green House Gas Emissions

In written correspondence Staff also cited new regulations related to greenhouse gas (GHG) emissions as a reason for designation of certain properties as RL5 as opposed to RL2. I do not anticipate that the marginal difference in overall residential density that could be achieved through the RL5 designation would have a perceptible difference on GHG levels. Rather, the County's Green Building and Low-Impact Development Ordinances are better suited to encourage the use of environmentally-friendly development and construction practices and materials to improve upon GHG emissions.

1

3. Change Circumstances Warrant the Re-Evaluation of Land Use Designations

Since the drafting of the Area Plan Update, William S. Hart Union High School District selected the Romero Canyon location for the proposed, future Castaic High School. The location is just north of the "donut hole" where Romero Canyon and Sloan Canyon Roads intersect. While the County is not responsible for siting and developing schools, its plans must take into account the affect of such public institutions on future development. The introduction of a high school in this location will increase traffic, affect traffic patterns and create new demands for residential and commercial construction. The siting of a high school in this area stands to have significant affects on development and is wholly inconsistent with the "down zoning" currently proposed by the Area Plan Update.

4. The Hillside Management Ordinance Can Ensure Development Which Respects Topography

Where the suitability criteria are a gross tool for assigning land use designations, the Hillside Management Ordinance is a much more useful tool for the effective regulation of proper development within hillsides. Land use designation aside, all development proposals within

617

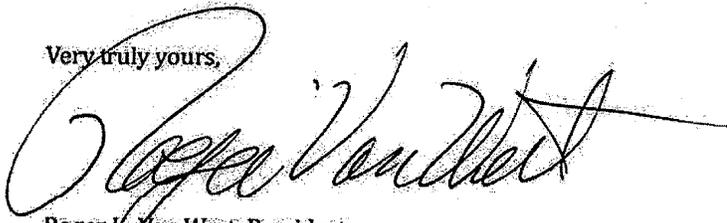
Hillside Management Areas will be closely evaluated to ensure that development respects the existing topography and the aesthetic of the Valley landscape. Accordingly, the County does not risk improper development of the Sloan Canyon area by re-designating a portion of the parcels as RL2.

In conclusion, the existing RL5 designation unnecessarily strips property owners of existing development rights, and severely impacts property values with no tangible public benefit. The suitability criteria provide no justification for the selection of an RL5 designation over an RL2 designation. With the Hillside Management Ordinance in effect, the County can ensure proper rural residential development. For all of these reasons, I would encourage the Commission to direct Staff to reconsider the designation of the "donut hole" as RL5. Further, I suggest the Proposed RL2 Re-Designation Area (Exhibit 1) for Staffs' consideration. This area is nearly indistinguishable from adjacent areas designated as RL2 and should be afforded the same property rights.

1

Lastly, on a related note, I would like to express my support for the recommendation to remove from the Highway Plan the Limited Secondary Highway designation for Sloan Canyon Road from Hillcrest Parkway north to Quail Valley Road. Removing the designation is consistent with the rural residential character of the area and further makes improvement of the road more likely.

Very truly yours,



Roger K. Van Wert, President
Van Wert, Inc.

Cc: Paul Novak
Rosalind Wayman

Att.
Exhibit 1 - Proposed RL2 Re-Designation Area

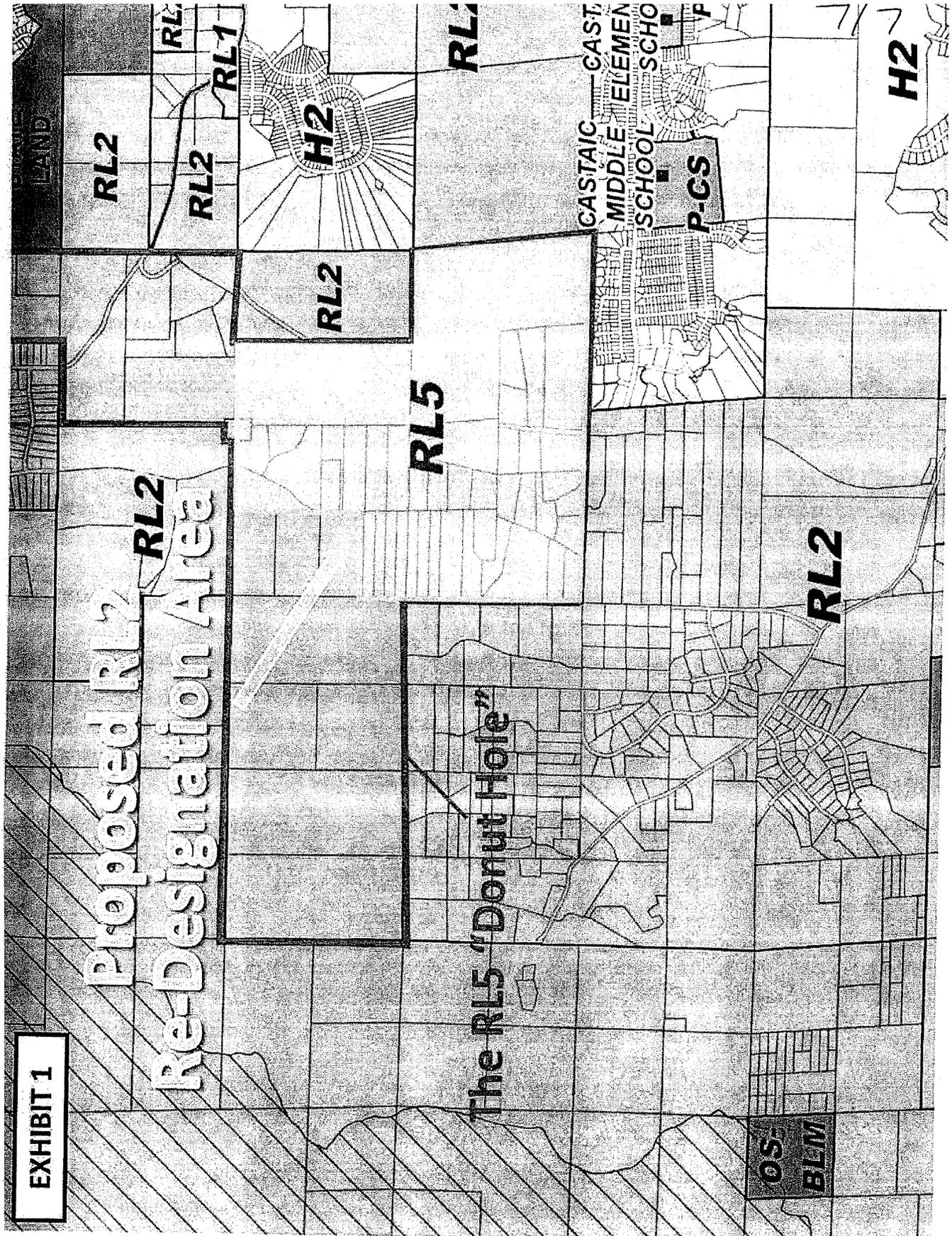


EXHIBIT 1

Letter No. D67

Letter from Van Wert Inc., December 7, 2010

Response 1

The commenter expresses opposition to the proposed Area Plan's designation of certain parcels within the Sloan Canyon area as Rural Land 5 (RL5). The commenter states that the RL5 designation unnecessarily restricts existing property rights with no public benefit and states that a Rural Land 2 (RL2) designation is more appropriate for these parcels, as it is consistent with the existing land use designations and zoning in the area. The commenter also states that the re-designated parcels are well served by infrastructure and are contiguous with the highly developed area along Hillcrest Parkway. The commenter lists several other factors to support consideration of his request.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular area that do not appear to relate to any physical effect on the environment. The comments regarding restriction of property rights, consistency with existing land use designations and zoning, infrastructure, contiguous development, and other factors only express the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

Glaser, Mitch

From: Ruthann Levison [raglev@socal.rr.com]
Sent: Tuesday, December 07, 2010 11:23 AM
To: Glaser, Mitch
Cc: Rosalind WAYMAN; David PERRY
Subject: Proposed McBean Road Extension

Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

**Subject: Extension of McBean Parkway onto San Francisquito Cyn Road
One Valley One Vision**

On behalf of the Santa Clarita Valley Trails Advisory Committee (SCVTAC), I respectfully request that the consideration and implementation of this extension be disapproved and abandoned.

SCVTAC has significant interest in any development that impacts all the years of dedication and hard work that we have been involved in to further the implementation of valley wide trails and the safety of the access points to these trails. We have a trail head being planned as we speak at this very location. This area is very rural and has many horsekeeping facilities.

The nearby community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horsekeeping and trails on the approved SunCal Project in the canyon and also 4 new horsekeeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don E Brook Farms.

ETI (Equestrian Trails International) is an active member of The Santa Clarita Trails Advisory Committee and is currently working on the plans for a required trailhead at this location of McBean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Clifflie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horsekeeping lots and protect the rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of the Community Standards.

Sincerely,

Ruthann Levison
SCVTAC Chair

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Letter No. D68

Letter from Ruthann Levison, December 7, 2010

Response 1

The commenter expresses opposition to the extension of McBean Parkway onto San Francisquito Canyon Road on behalf of the Santa Clarita Valley Trails Advisory Committee (SCVTAC). The commenter states that the SCVTAC has significant interest and involvement in the implementation of valley wide trails and the safety of the access points to these trails. The commenter points out that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots. The commenter also states that Equestrian Trails International is active in the SCVTAC and is involved in plans for a required trailhead at the location of McBean Parkway and Copperhill Drive. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see **Appendix 3.2** for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (**Policy C 2.1.5**). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (**Policy C 2.2.1**), adopting consistent standard street cross sections (**Policy C 2.2.2**), coordinating circulation plans of new development project with

each other (**Policy C 2.2.3**), and adopting common standards for pavement width (**Policy C 2.2.5**). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (**Policy C 2.2.6**). Where practical, the use of a grid or modified grid street system would be encouraged (**Policy 2.2.7**), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (**Policy C 2.2.8**). As set forth by **Policy C 2.2.10**, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (**Policy C 2.2.11**), and private streets would typically be constructed to standards for public rights-of-way (**Policy C 2.2.12**).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community’s concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.

1/1

HACKERBRALY, LLP *Attorneys and Counselors at Law*
26650 The Old Road / Suite 201 / Valencia, CA 91381 / Phone: (661) 259-6800 / FAX: (661) 259-6836

December 7, 2010

VIA EMAIL: mglaser@planning.lacounty.gov

Mitch Glaser, Principal Planner
Los Angeles County Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Re: Santa Clarita Area Plan-One Valley One Vision
Support-Elimination of Designation of Sloan Canyon Road as a
Limited Secondary Highway

Dear Mr. Glaser,

This firm represents Patricia and Norman Howell, along with numerous other residents of the Sloan Canyon area of Castaic.

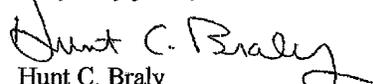
We strongly support the proposed change in OVOV which removes the Limited Secondary Highway designation from Sloan Canyon Road north of Hillcrest Road. This is a rural, equestrian canyon which the County has correctly determined needs to be protected. In addition, we would urge your consideration of extending this change for the remainder of Sloan south to Hasley Canyon Road. This stretch of road is bordered by many equestrian ranches and is less than one mile in length.

It is understood that this issue has stirred some controversy due to the selection of the Romero Canyon site for the future Castaic High School. However, that decision should not impact the sound and realistic proposal to change the highway designation of Sloan Canyon Road.

To deal with some of the concerns which have been expressed, it is our understanding that the northern part of Sloan can be connected to Mandolin Road, which runs east and west. This road can be improved in the future with B&T fees and be connected to the new Castaic High School.

Thank you for your consideration of our position.

Very truly yours,


Hunt C. Braly
HACKERBRALY, LLP

cc: clients

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Letter No. D69

Letter from Hackerbraly LLP, December 7, 2010

Response 1

The commenter states that his law firm represents Patricia and Norman Howell, along with numerous other residents of the Sloan Canyon area of Castaic, in support of the proposed Area Plan's removal of the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway. The commenter expresses the opinion that decisions regarding the proposed Castaic High School should not impact the proposed removal of the Limited Secondary Highway designation.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also urges the County to consider removal of the Limited Secondary Highway designation from the remainder of Sloan Canyon Road south of Hillcrest Parkway to Hasley Canyon Road. The commenter states that this portion of Sloan Canyon Road is bordered by many equestrian ranches and is less than 1 mile in length.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

#6
1/26



Castaic Area Town Council
Post Office Box 325, Castaic, California 91310. (661) 295-1156. www.castaic.org

December 8, 2010

County of Los Angeles
Regional Planning Commission
320 West Temple Street
Los Angeles, CA 90012

Re: Santa Clarita Valley Area Plan
One Valley One Vision

Thank you for the opportunity to speak today, on a joint program between the City of Santa Clarita and the County of Los Angeles that has been called One Valley One Vision (OVOV).

The Castaic Area Town Council (CATC) and the residents we represent would like the Castaic area OVOV plan to reflect a joint effort between Castaic and the County of Los Angeles; just as the plan is a joint effort between the City of Santa Clarita and Los Angeles County.

This planning document describes the area as a valley of villages and one of those villages is Castaic. The CATC and its OVOV Subcommittee have been diligently gathering information to determine the potential impacts to our community. The OVOV subcommittee has had several meetings and the CATC has had several presentations made to them with opportunities for community input. The mission of the CATC is twofold. First, disseminate information from various County agencies and other sources to the residents of Castaic and, second, to provide a represented voice of the community back to the County.

Six short years ago, in December of 2004, the Los Angeles County Board of Supervisors approved the Castaic Area Community Standards District (CSD) after ten years of community input and negotiations involving several members of the local community, county officials, and members of the CATC. The CSD defines the Castaic area of influence within Los Angeles County and describes the development standards that manage the growth of our community. The CSD's goal is to help maintain the rural look-and-feel and natural resources that comprise our area. The CSD defines how Castaic should grow and establishes guidelines for developers, county officials, and citizens in managing that growth. It identifies several ridgelines and trails in the area to be preserved and requires minimum lot sizes for new development. It touches on many other aspects of our day-to-day lives that we, as Castaic residents, wish to preserve for future generations. It should be noted that this community will not take lightly any changes to this recently adopted codification of the CSD that we worked so hard to obtain. It matters not whether the proposed changes come from the City of Santa Clarita or county officials. The CSD was a negotiated document and this CATC insists that any conflicting components within the OVOV Planning document remain subordinated to the Castaic Area CSD.

The following is a list of positions that were adopted at a Regular Meeting of the Castaic Area Town Council on September 16, 2009 and January 20, 2010. The CATC continues to review the Draft Santa Clarita Area Plan and may supplement this list of positions when additional findings so warrant.

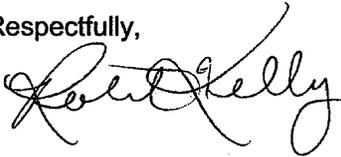
1. The CSD remains in place and is the guiding document in all matters as it relates to land use and zoning in Castaic.
2. The CATC supports the inclusion of a limited secondary highway from Copperhill Road to Castaic for a much needed alternative access for community-wide safety reasons and future circulation. See attached letters from Castaic Area Town Council, Castaic Chamber of Commerce, City of Santa Clarita and Steve Burger of the Los Angeles County Department of Regional Planning.
3. The CATC supports a zoning designation of RL2 in Charlie Canyon which appears closest to the existing designation. See enclosed letters and maps from Charlie Canyon landowners dated August 18, 2009.
4. The CATC supports a land use designation of RL2 in the Sloan and Romero Canyon areas. This is in conformance with the CSD and in conformance with surrounding properties which have a designation of RL2 or higher density. See enclosed documentation including a July 20, 2009 petition signed by owners, and maps.
5. The CATC is opposed to the elimination of the clustering provision in the unincorporated rural areas of Castaic as presented in OVOV draft. See enclosed letter dated January 25, 2010.

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Any changes to the plan, as it currently exists effects the residents of Castaic more than any other group and we feel our requests should be included in the final plan.

Thank you for your support of the Castaic Area Town Council, the Castaic Area Community Standards District, and the property owners of Castaic as we strive to make Castaic the best place to live.

Respectfully,



Robert Kelly
President

Cc: Paul Novak
Rosalind Wayman



Castaic Area Town Council
Post Office Box 325, Castaic, California 91310 (661) 255-1156 www.castaic.org

3/26

⊕ (2)

April 22, 2009

Steve Burger
Principal Civil Engineer
Los Angeles County Department of Public Works
900 S. Fremont Ave
Alhambra, CA 91803

Re: New LACO General Plan

Dear Mr. Burger:

The Castaic Area Town Council would like the county's new general plan to include a future collector road that would connect Lake Hughes Road to Copperhill Drive. The northern end of Castaic which includes the housing tracts of Bravo, Double CC Ranch, Encore, Hidden Lake, Lake Ridge, Stone Gate and North Lake account for the majority of Castaic's population. This area will continue to grow in the future with the North Lake specific plan and other areas being developed.

Each year, the Castaic community becomes paralyzed on numerous occasions due to closures of the I-5 freeway resulting from snow, fires, traffic accidents, and bumper to bumper traffic on holiday weekends. Because "The Old Road" parallels the I-5 freeway, it also becomes heavily congested during these events and does not serve as a good alternate. These two paths are currently the only access routes for Castaic residents and others.

Our concept provides for a future collector road connecting Lake Hughes Road to Copperhill which would serve as a much needed alternate route or secondary access. This would be used by local residents of both Castaic and the City of Santa Clarita. We believe that this secondary access is vitally important and that safety and emergency responders must have access to our affected communities. Currently, these responders are hindered by congested and/or blocked access to our neighborhoods during the events mentioned above.

We hope the county will see the benefit of this road to the circulation element of our valley and the safety of our residents. We believe it will be a great asset to the One Valley One Vision concept. We look forward to working with you to accomplish this goal.

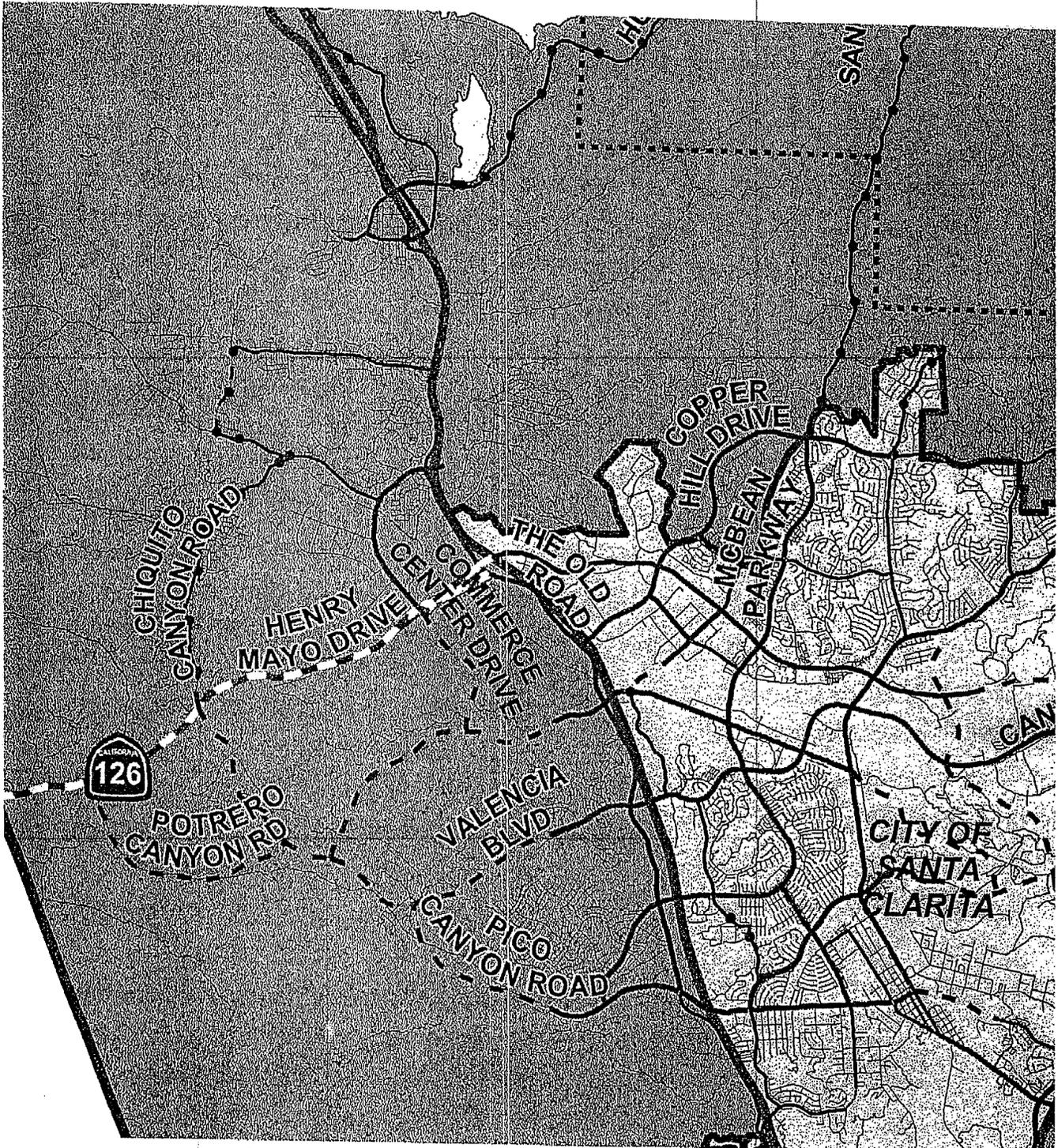
Sincerely,
Castaic Area Town Council

Steven J. Teeman
President

CC: Paul Novak
Rosalind Wayman

ORIGINAL

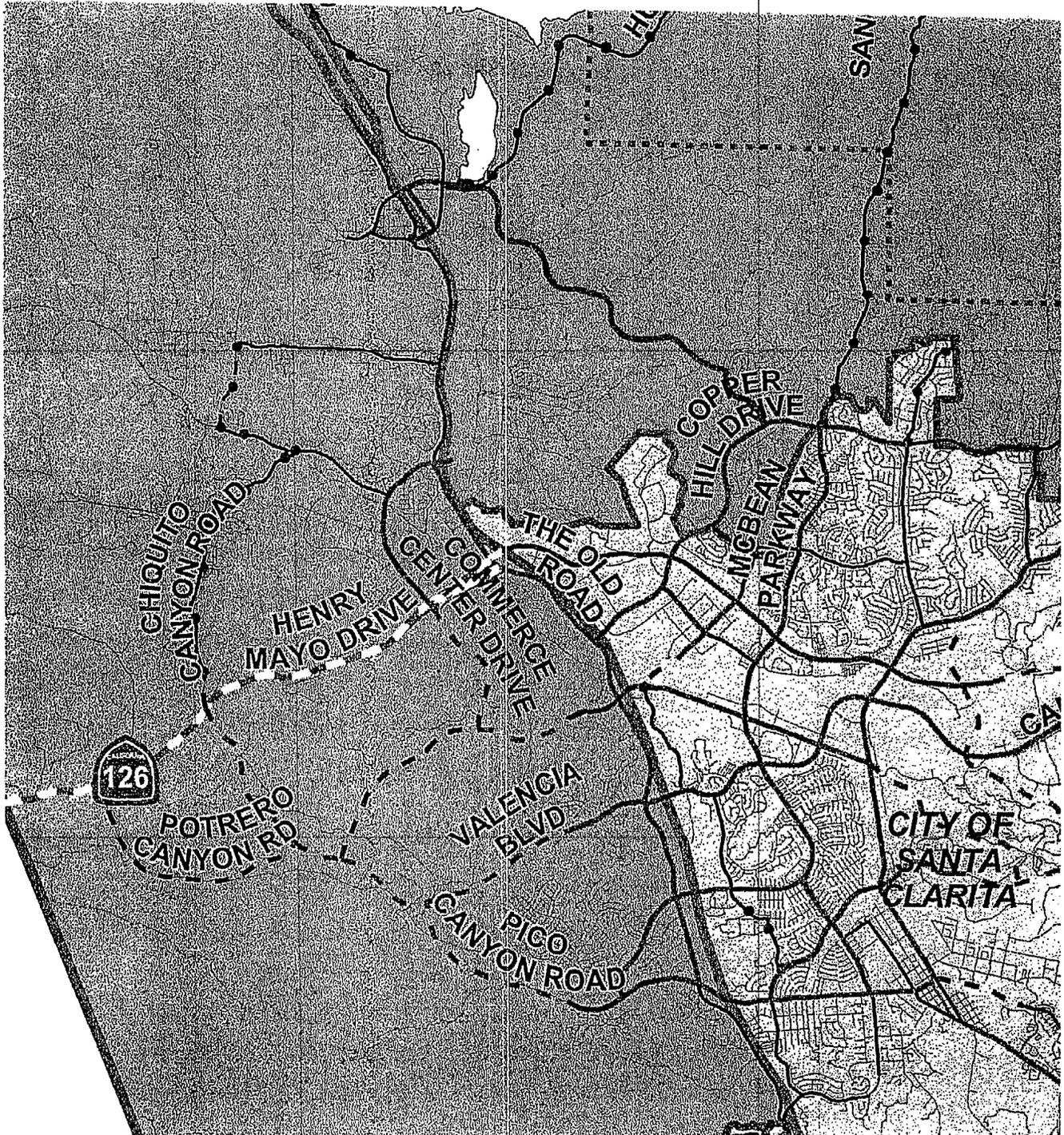
4/26



ORIGINAL

DRAFT

5/26



DRAFT



6/26

City of
SANTA CLARITA

23920 Valencia Boulevard • Suite 300 • Santa Clarita, California 91355-2196
Phone: (661) 259-2489 • FAX: (661) 259-8125
www.santa-clarita.com

May 1, 2009

Mr. Jeff Preach
31744 Castaic Road, Suite 201
Castaic, CA 91384

Subject: Your facsimile concerning OVOV Circulation Element, Dated 4-23-08

Dear Mr. Preach:

Thank you for sending the above referenced facsimile and copy of the letter from the Castaic Area Town Council dated April 22, 2009 addressed to Steve Berger. During our meeting last month, we expressed an opinion to you concerning northwest Santa Clarita Valley circulation and also had an opportunity to reiterate this opinion during our subsequent telephone conversation.

We concur with your perception that the existing circulation system in the north western Santa Clarita Valley is inadequate. We believe the area generally bounded by Copperhill Drive on the south, San Francisquito Canyon on the east, the National Forest on the north and Interstate 5 on the west, may benefit from a properly designed collector roadway which would carry higher traffic volumes than would be appropriate for a typical local neighborhood street. By properly designed collector roadway, we are specifically referring to a non-loaded collector - that is a collector roadway with no houses directly fronting onto it and no residential driveways intersecting with it. An example of this type of collector can be seen elsewhere in the Santa Clarita Valley, such as Hillsborough Drive between Newhall Ranch Road and Decoro, as well as Tesoro Del Valle Drive and Rancho Tesoro, as constructed within the first phase of the existing Tesoro Del Valle project. Specifically, we believe this collector street could be critical to providing adequate access for emergency services providers and to future residents within the future phases of the Tesoro project and within the Tapia Canyon Ranch project which will abut the Tesoro project to the west.

As you know, the City is currently reviewing both of these projects and anticipates that we would be suggesting to the County, among other things, that a properly designed collector street be incorporated into the design of both of these projects. If development of this scale is ultimately approved in this area, we believe a collector roadway, which typically consists of two lanes within a 64 foot right-of-way, will be adequate to convey east-west traffic within the area east of Interstate 5. If constructed, this collector roadway would provide enhanced circulation for the projects themselves, but also enhanced circulation for the surrounding community, including the Castaic area.



Mr. Jeff Preach
May 1, 2009
Page 2

7/26

Thank you for the opportunity to reiterate and clarify our position. We will be happy to copy Steve Berger with this correspondence, as you have requested. We appreciate your enthusiasm and interest in helping to make the Castaic area and the greater Santa Clarita Valley community a great place to live.

Sincerely,



Sharon Sorensen
Senior Planner

SS:lep

C:\CD\Current\IRPA\IRP Files\VTN 53822\J. Preach

Enclosure

cc: Paul Brotzman, Director of Community Development
Lisa Webber, AICP, Planning Manager
David Koontz, Associate Planner
Steve Berger, Principal Civil Engineer
Paul Novak, Planning Deputy, 5th District
Rosalind Wayman, Senior Deputy, 5th District
Castaic Area Town Council



8/26

31744 Castaic Road · Suite #103 · Castaic, California 91384 · (661) 295-8303

April 23, 2009

Steve Burger
Principal Engineer
Los Angeles County Department of Public Works
900 S. Fremont Avenue
Alhambra, CA 91803

Re: New LACO General Plan

Dear Mr. Burger:

This is to inform you that the Castaic Chamber of Commerce supports the Castaic Area Town Council's request for the county's new general plan to include a future collector road that would connect Lake Hughes Road to Copperhill Drive.

This road would release our community from the troublesome entanglements during the freeway closures caused by snow, fires, vehicle accidents, and holiday traffic. Additionally, it would promote commerce in our town by creating easier access to the over 200 local businesses and to the recreational opportunities available at the beautiful Castaic Lake.

We hope that the County will strongly consider our support of the Town Council's request to expand the One Valley One Vision concept to include this future collector road connecting Lake Hughes to Copperhill Drive in the New LACO General Plan.

Sincerely,
Castaic Chamber of Commerce

A handwritten signature in black ink, appearing to read "Rev. Latisha Stewart Smith".

Rev. Latisha Stewart Smith
President

The Castaic Chamber of Commerce Board of Directors:

Rev. Latisha Stewart Smith, President * Scott Moon, 1st Vice-President
Judith Cassis, 2nd Vice President * Ray Graeber, Treasurer
Shelly Cazan, Corporate Secretary * Jack Crawford, Director * Brian Higgins, Director
John Musella, Director * Patrick Raach, Director

9/26

STEVE BURGER
8-27-09

Jeff Preach

From: Burger, Steve [SBURGER@dpw.lacounty.gov]
Sent: Thursday, August 27, 2009 5:22 PM
To: Jeff Preach; Derakhshani, Mahdad
Cc: Paul Novak; Cadena, Diego; Hunter, Dennis; Mitch Glaser; Maselbas, Paul; Narag, Andy
Subject: RE: Request for info

Jeff, I wanted to make sure I got you an update by close of business today because as I understand, the Castaic Town Council Meeting is coming up and you would like to share the information with them.

You requested a breakdown in writing of the amount of B&T money expended on the Old Road project to date.

I apologize that I don't yet have the detailed breakdown for you.

I am working with the project managers, who keep track of the expenditures, and they will be providing more details as to the breakdown of costs. Mahdad when you get the detailed breakdown of expenditures, please let me know so I can pass the info along to Jeff.

Regarding the concept of a roadway connecting the Tesoro Area with the Castaic Community, please consider this e-mail as written verification that the Department of Public Works supports inclusion of such a connection as a Limited Secondary Highway on the Highway update portion of the OVOV. This will require developers within that corridor to dedicate Right of Way and construct a two lane, rural highway, along with additional dedication and slope easements to allow the construction of four lanes in the future if and when it is needed. We will be drafting a letter to the Department of Regional Planning making such a recommendation.

Since the environmental document and final draft of the OVOV are already completed, we believe the best way to incorporate this into the Plan is to have testimony at the Planning Commission hearing (from Public Works, and more importantly, from the Castaic community) in support of such an inclusion. The Planning Commission can then direct Regional Planning to incorporate the alignment into the Plan.

I want to make note that we are in the process of contacting property owners and developers in the corridor and soliciting their input, since this alignment will directly impact their properties. Any comments or concerns from those impacted property owners would be part of the decision making process as this plan moves forward. Jeff, you mentioned that you have already had discussions with some or all of the major property owners impacted by this alignment, and that they had no objections. It might be helpful if you or the Town Council perform additional outreach to gain their support.

Please let me know if you have any further questions, and I look forward to working with the community to put in place a highway alignment that provides the enhanced circulation that is desired.

From: Jeff Preach [mailto:jeff.preach@earthlink.net]
8/27/2009

08/31/2009 00:48 FAX
AUG-25-2009 10:13

WBSF ELECTRIC

002/003
818 9541916 P.01/01



Charlie Canyon Landowners

August 18, 2009

The Charlie Canyon Landowners is requesting the Castaic Area Town Council's support regarding our proposed change to the Preliminary Draft of the OVOV plan.

We all invested in our properties based on the current zoning. If the proposed zoning is approved the Charlie Canyon Landowners all stand to suffer a financial disaster.

The current preliminary draft changes the current zoning from A2 to RL20. This is a zoning change from 1 house per 2 acres to 1 house per 20 acres. We are not asking for a greater density. We would like the proposed designation to be RL2. The RL2 designation is close to the existing one. Thank you for your consideration.

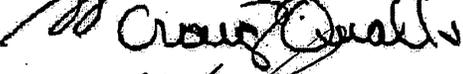
Sincerely,
The Charlie Canyon Landowners

Pat Corrigan 

Robert Kelly 

Bob Meottel 

Jeff Preach 

Craig Quall 

Kelly Ross 

Robbie Sjoberg 

COPY

TOTAL P. 01

11/26

**Preach, Kelly and Qualls
31744 Castaic Road Suite 201
Castaic, CA 91384**

April 30, 2009

Los Angeles County
Department of Regional Planning
Attn: Mitch Glaser
320 West Temple Street
Los Angeles, CA 90012

Re: APN# 2865-004-007 40 A/C
APN# 2865-004-018 and 019 65 A/C
APN# 3244-023-011 75 A/C

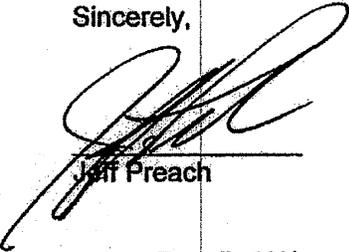
Dear Mr. Glaser,

We are writing this letter per our several meetings in regards to our property in Charlie Canyon, Castaic.

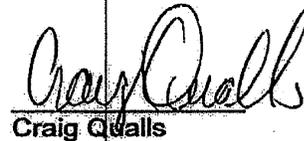
We have enclosed for your review property descriptions, assessor's parcel maps with APN numbers to describe our property. Also enclosed please find a Charlie Canyon subdivision study which is designed to dovetail unto the existing Tapia Canyon proposed development.

We are formally asking to be kept out of the OVOV zone changing that is being contemplated.

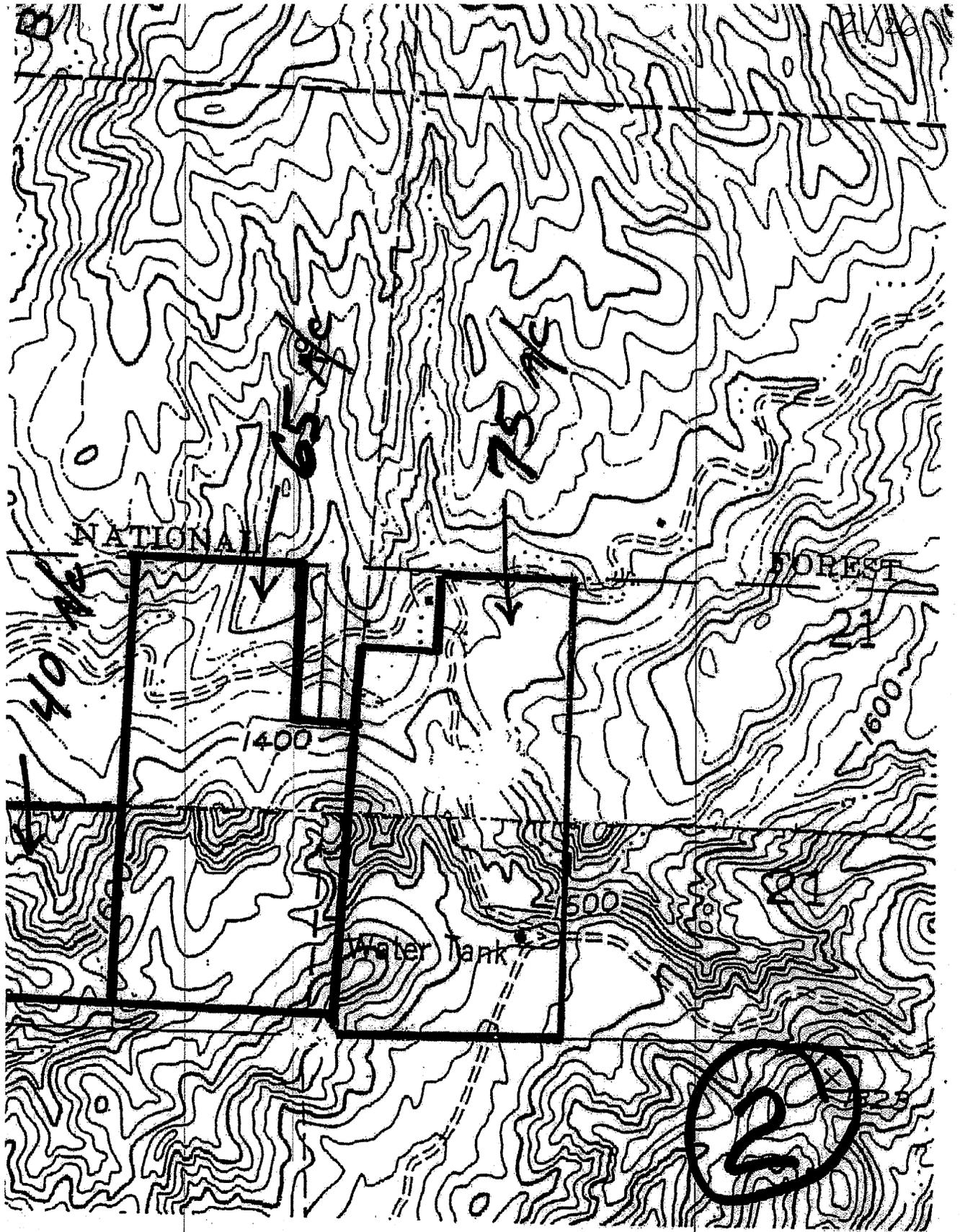
Sincerely,

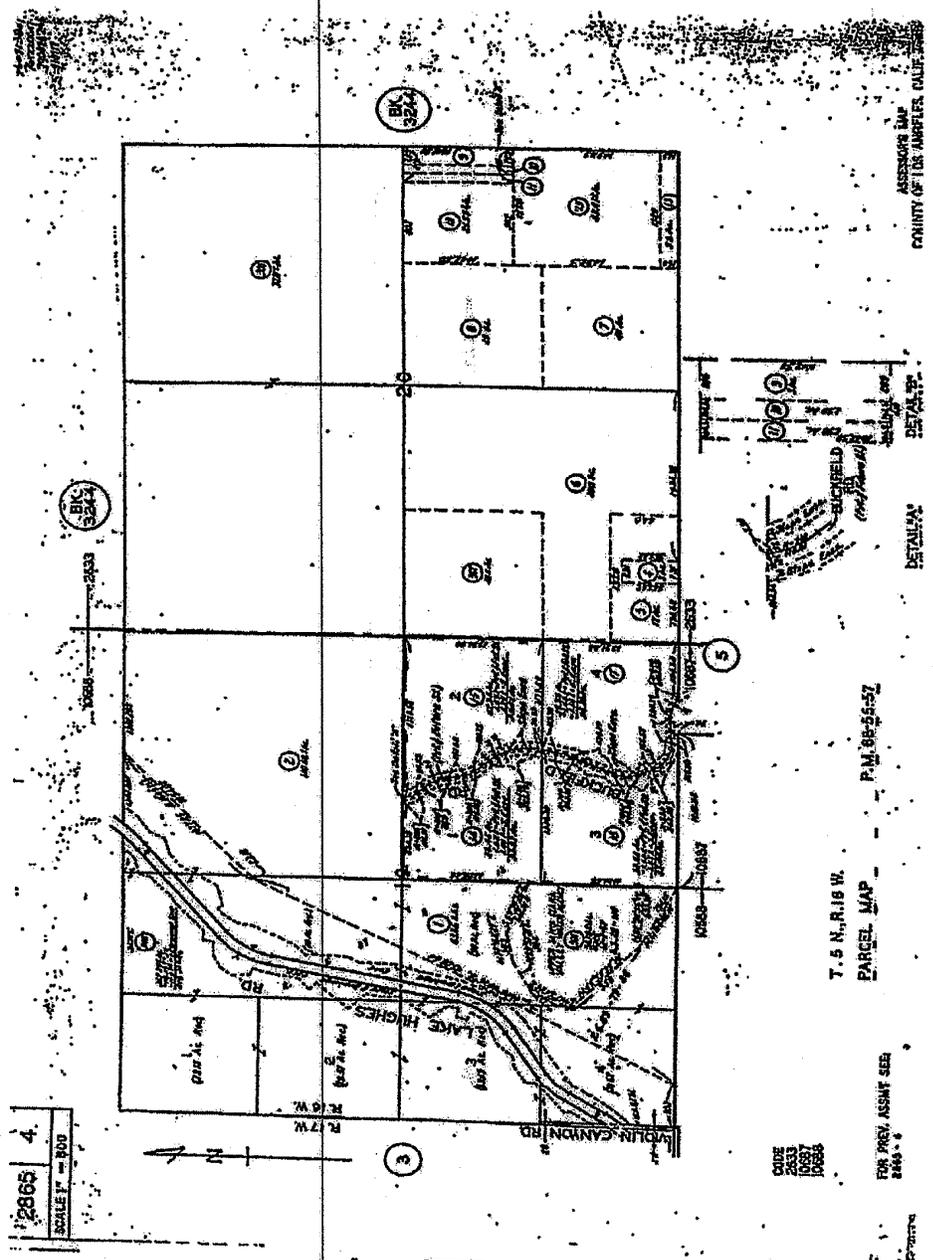

Jeff Preach


Robert Kelly


Craig Qualls

cc: Rosalind Wayman
Paul Novak





COUNTY OF LOS ANGELES, CALIF. 90000

DETAILS 25/24/11

7.5 N., R. 16 W. PARCEL MAP P.M. 96-56-57

CODE 2833 0057 0055

FOR PREV. ASSM'T SEE 2865-5

16/26

CHARLIE CANYON LOT STUDY

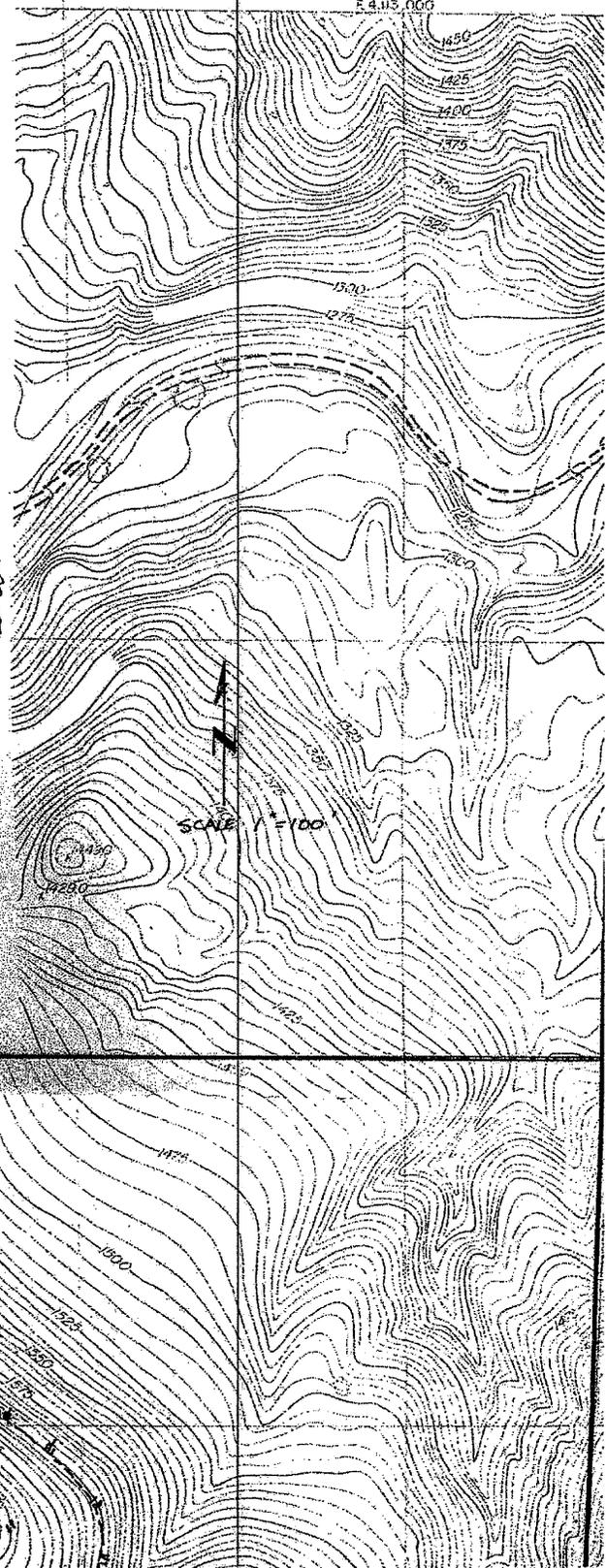
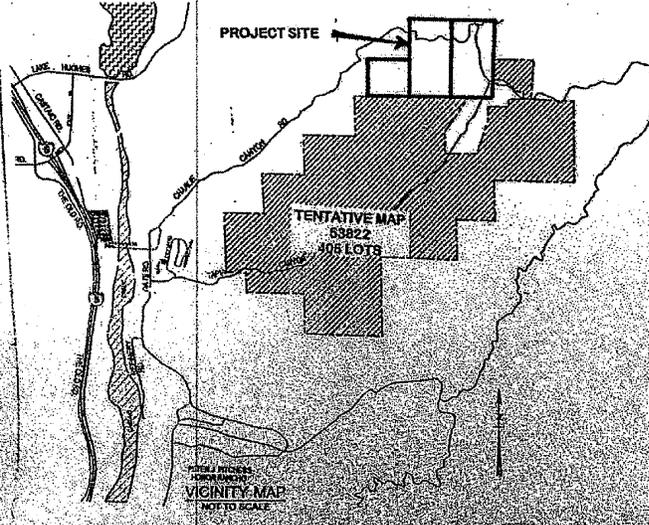
APRIL 15, 2009

PREPARED FOR: CHARLIE CANYON PARTNERS
JEFF PREACH
31744 CASTAIC ROAD SUITE 201
CASTAIC, CA 91384
661-993-7999

PREPARED BY: DEAN PARADISE, RCE 39830
29565 BARINGER ROAD
CASTAIC, CA 91384
661-803-2638

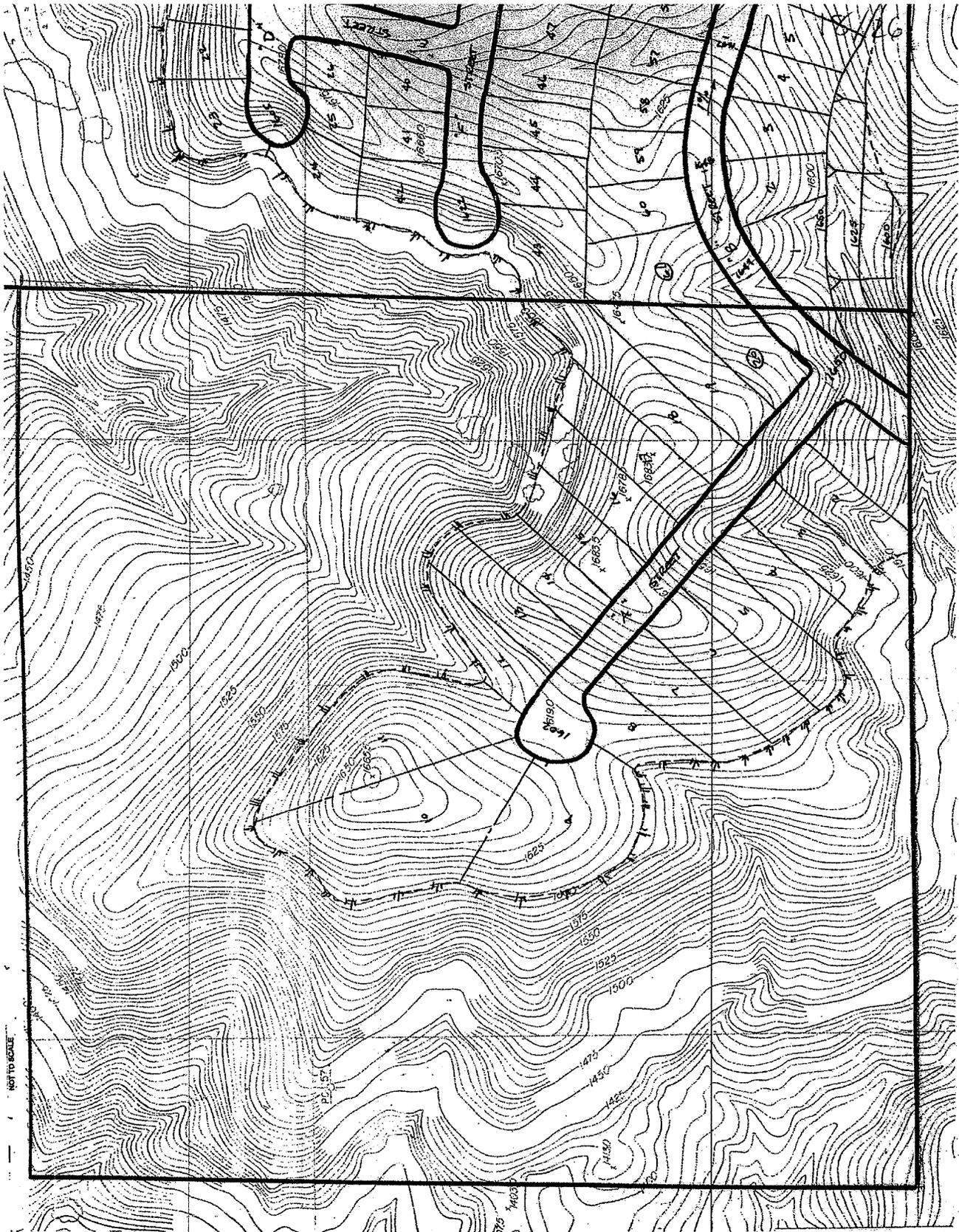
PROJECT APN'S:
2865-004-007 (40 Acres/20 Lots)
2865-004-018 & 019 (65 Acres/ 61 Lots)
3244-023-011 (75 Acres/39 Lots)

LOT SIZES RANGE FROM 8,000 SF, 10,000 SF AND ACRE +



7/26







3.4

19/26

Henry Urick / Allen B. Russell
28631 Sloan Canyon Road
Castaic, CA 91384

9/2/09

Request for Town Council Time

Time is requested by the above for a place on the agenda for the following:

1.) OVOV is downgrading Sloan Canyon Road from secondary road to street, which will impair developing Sloan Canyon, because this downgrade will prevent offset of B+T Funds.

2.) The Sprinkle property adjacent to our planned development, tentative map is proposed to be changed from R2 to R5 in an island surrounded by R2 development.

We request the Town Council's support for no changes in the above created by OVOV.

Regards,
Henry Urick

3

20/26

September 1, 2009

Castaic Town Council

Subject: LA County One Valley One Vision
Draft Land Use Plan

Council Members,

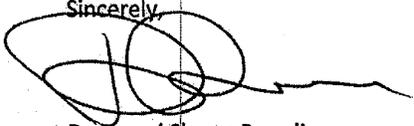
It has come to my attention that the County Planners have designated my property and many other properties of my neighbors as a proposed land use of RL5. This designation would permit the development of properties to a density of one unit per 5 acres. This is based on THEIR ESTIMATE of what could be development in this area without any site development review.

My wife and I purchased our property which is about 5.5 acres in size. We have intended to retire and subdivide the property into to 2.25 acre parcels. Currently we have an 8,000 sf pad with our house on it and another CERTIFIED BUILDING PAD on our property of 10,000 sf which we currently use as a riding arena. This subdivision would be completely in keeping with the surrounding existing homes in Hasley Canyon and the Greystone Homes.

I have since written a letter to the County and have received the support and signatures of over a dozen property owners who support the revised land use to a designation of RL2, which would be one unit per 2 acres. This designation does not APPROVE all properties for that, grading and access issues would need to be addressed for each parcel prior to approval, but this would permit these properties to subdivide to conform to the surrounding parcels. See attached map.

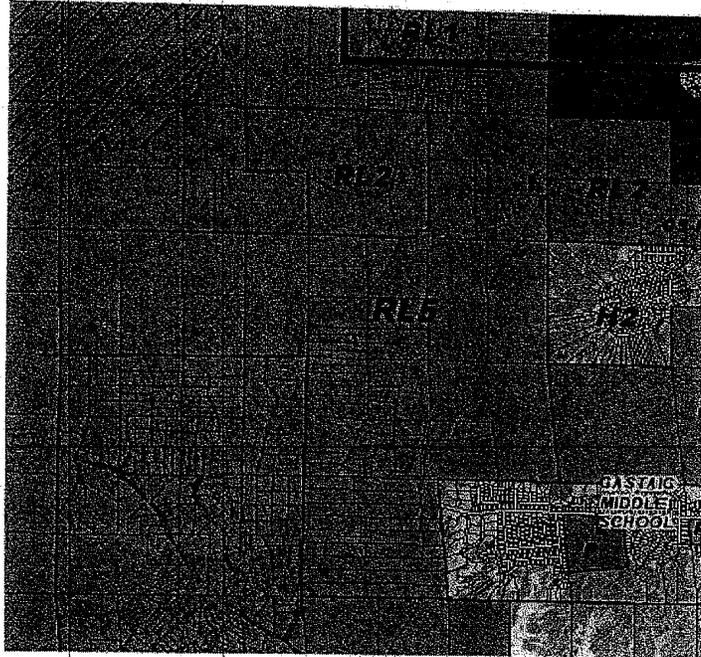
At this time my wife and I request that the council take up this issue, accept community input and make a recommendation to the County Supervisors Office. You will find unanimous approval from the affected property owners, who are only asking for permission to create parcels in conformance with the CSD and in conformance to the existing and surrounding properties. I have attached my petition letter to the County.

Sincerely,



Dean and Sherry Paradise
29565 Baringer Road
Castaic, Ca 91384

21/28



DEAN PARADISE ENGINEERING
REGISTERED CIVIL ENGINEER LIC. 39839
29585 Hartinger Road
Castaic, CA 91384
861-803-2838

22120
④

LA County Planning Department

July 20, 2009

Attention: Mitch Glaser, AICP
Supervising Regional Planner
County of Los Angeles
Department of Regional Planning
Countywide Studies Section
(213) 974-6476

Subject: One Valley One Vision
LA County General Plan Update
Romero and Sloan Canyon Properties
Castaic, California

Dear Mitch,

It has come to our attention that under the proposed General Plan Land Use Designation the proposed land use for the Sloan & Romero Canyon properties has been designated as RL 5. One unit per 5 acres. As a property owner within this proposed land use designation we hereby request the re evaluation of this designation to RL2, to One Unit Per 2 Acres.

We have worked closely with the Castaic Town Council in developing the Castaic Community Standards District and we have intended this area to allow subdivisions of property to 2 Acres in size. This is in keeping with the existing developed lots of Remington, Sharp, Colt properties. Indeed a two acre lot would be larger than the 1 acre lots of the existing developments.

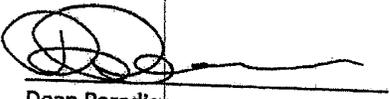
Our properties are varied in topography, however when compared with the existing developments in the area, old Hasley Canyon Development and Graystone's Hasley Hills Estates, which have a very similar terrain we feel that our properties with a minimum lot size of 2 acres is completely in character with the surrounding properties. Furthermore the properties are surrounded by properties to the North, the South the East and the West as RL 2.

Thank you very much for your consideration.

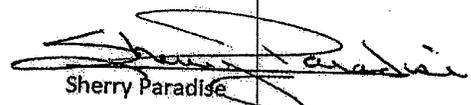
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DEAN PARADISE ENGINEERING
 REGISTERED CIVIL ENGINEER LIC. 39830
 29565 Baringer Road
 Castaic, CA 91384
 661-803-2838

As a property owner within this proposed land use designation we hereby request the re evaluation of this designation to RL2, to One Unit Per 2 Acres.



Dean Paradise
 APN # 3247-026-053
 29565 Baringer Road



Sherry Paradise

SLOPANA KADICH Jackson
 31315 SLOAN CYN. RD
 3247-054-005

Doreen C. Lantry
 30801 Sloan Cyn Rd Castaic
 3247-042-015

SUSAN KADICH Susan Kadich
 31315 SLOAN CYN RD
 3247-054-004

ELIZABETH M. LANTY Elizabeth Lantry
 30801 Sloan Cyn Rd. Castaic
 3247-042-015

Bruce & Julie Thomas Boardman
 30521 Sloan Cyn Rd Castaic
 3247-47-003

Ben & Joann Platt
 31233 Romero Cyn. Rd
 Castaic, CA. 91384
 APN # 3247-026-48

JULIE THOMAS Julie
 30521 Sloan Cyn Rd. CASTAIC.
 3247-47-003

Marvin Metcalf
 30711 Romero Cyn
 3247-42-36

Manette Metcalf
 Manette Metcalf
 30711 Romero Cyn
 3247-42-36

Steve Moffatt
 Steve Moffatt
 30701 Romero Cyn Rd
 Castaic, Ca 91384
 3247-042-034

SCOTT MUIR
 31160 Romero Cyn Rd
 Castaic, CA
 3247-026-061

Steve Moffatt
 30430 Remington Rd
 Castaic, CA 91384

Steve Moffatt
 Steve Moffatt
 Deadwood 180 AC
 3247-027-012
 3247-027-002

Kayla Garcia Smith
 Kayla Garcia Smith
 30594 Romero Cyn Rd.
 Castaic CA 91384
 3247-047-026

1.15

24/26

DEAN PARADISE ENGINEERING
 REGISTERED CIVIL ENGINEER LIC. 39830
 29545 Hartweg Road
 Castaic, CA 91384
 661-803-2838

As a property owner within this proposed land use designation we hereby request the re evaluation of this designation to RL2, to One Unit Per 2 Acres.

Stephen Otis
 STEPHEN OTIS
 31048 N ROMERO CANY RD
 3247-026-039
 3247-042-030

Vera Gregor
 VERA GREGOR
 30910 ROMERO CANY.
 CASTAIC, CA. 91384

Denny Gregor
 DENNY GREGOR
 30910 ROMERO CANY. RD,
 CASTAIC, CA. 91384
 3247-42-030

Robert Stober
 ROBERT STOBBER
 30706 Romero Canyon Rd
 Castaic 661 810 3615
 3247-042-026
 3247-042-027

Tom Caesar
 TOM CAESAR
 30911 ROMERO CANY
 3247-042-022
 KAREN CAESAR
 30911 Romero Canyon Rd
 Castaic, CA. 91384
 3247-042-022

Frank B. Hilland
 FRANK B. HILLAND
 29615 BARNES RD
 CASTAIC, CA 91384
 3247-046-054

Jeff Sloan
 JEFF SLOAN
 CASTAIC 913
 # 2965-23-14

25/26

DEAN PARKER ENGINEERING
REGISTERED CIVIL ENGINEER NO. 30250
2555 DUTCHMAN ROAD
CASTLE, CA 91324
805-403-2830

As a property owner within this proposed land use designation we hereby request the re-evaluation of this designation to RL2, to One Unit Per 2 Acres.

Kenneth F. Yarber (KENNETH F. YARBER)
Delores G. Yarber (Delores G. Yarber)

NOTE: ABOVE OWN APN 3247-026-043 (15.5 ACRES)

ADDRESS: 15529 BAKER CYN. RD., SANTA CLARITA, CA 91390
PH: 661-251-7735

Lined area for additional text or signatures.



Castaic Area Town Council

Post Office Box 325, Castaic, California 91310 (661) 295-1156 www.castaic.org

January 25, 2010

Regional Planning Commission
Los Angeles County
320 West Temple St. 13th floor
Los Angeles, Ca. 90012

**Re: One Valley One Vision
Project # R2007-01226-(5)
Plan Amendment # 200900006
Zone Change # 200900009**

Dear Regional Planning Commission,

On January 20, 2010, The Castaic Area Town Council voted 9/1 to approve the following:

The Castaic Area Town Council is opposed to the elimination of the clustering provision in the unincorporated rural areas of Castaic as presented in the One Valley One Vision Draft.

Sincerely,

Robert Kelly
President Castaic Area Town Council

Cc: Mitch Glaser
Paul Novak
Rosalind Wayman
CATC

26/26

5

Letter No. D70

Letter from Castaic Area Town Council, December 8, 2010

Response 1

The commenter describes the mission of the Castaic Area Town Council (CATC) and describes the efforts of the CATC and its OVOV subcommittee to review the proposed Area Plan. The commenter also describes the efforts of the CATC with regard to the Castaic Area Community Standards District (CSD), which was adopted by the Board of Supervisors in 2004, and states that the CATC insists that any conflicting components within the proposed Area Plan remain subordinated to the CSD. The commenter then provides a list of CATC positions, which were adopted by the CATC at regular meetings on September 28, 2009 and January 20, 2010 and are described as follows:

1. The CSD remains in place and is the guiding document in all matters as it relates to land use and zoning in Castaic.
2. The CATC supports the inclusion of a limited secondary highway from Copperhill Road to Castaic for a much needed alternative access for community-wide safety reasons and future circulation.
3. The CATC supports a zoning designation of RL2 (Rural Land 2) in Charlie Canyon which appears closest to the existing designation.
4. The CATC supports a land use designation of RL2 (Rural Land 2) in the Sloan and Romero Canyon areas. This is in conformance with the CSD and in conformance with surrounding properties which have a designation of RL2 or higher density.
5. The CATC is opposed to the elimination of the clustering provision in the unincorporated rural areas of Castaic as presented in OVOV draft.

The comment provides factual background information, raises issues related to the proposed Area Plan that do not appear to any physical effect on the environment and do not raise an environmental issue within the meaning of CEQA, and raises economic, social or political issues that do not appear to relate to any physical effect on the environment and do not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. The CSD cannot be “the guiding document in all matters as it relates to land use and zoning in Castaic,” as requested by the commenter. The CSD is a component of the County Zoning Ordinance (Zoning Ordinance). Section 22.44.090 of the Zoning Ordinance states: “(T)he community standards districts are established as supplemental districts to provide a means of implementing special development standards contained in adopted neighborhood, community, area, specific and local coastal plans within the unincorporated areas of Los Angeles County,

or to provide a means of addressing special problems which are unique to certain geographic areas within the unincorporated areas of Los Angeles County.” Section 22.44.137.A of the Zoning Ordinance states: “(T)he Castaic Area Community Standards District (CSD) is established to protect the rural character, unique appearance, and natural resources of the Castaic Area communities. The CSD also ensures that new development will be compatible with the Castaic area’s existing rural neighborhoods and with the goals of the Santa Clarita Valley Area Plan. Finally, the CSD promotes the establishment of trucking-related businesses in locations where trucking activities presently occur, while ensuring that trucking businesses do not interfere with the community’s residential character, circulation, and traffic patterns.”

Section 65350 of the California Government Code states: “(C)ities and counties shall prepare, adopt, and amend general plans and elements of those general plans in the manner provided in this article.” Section 65680 of the California Government Code states, in part: “County or city zoning ordinances shall be consistent with the general plan of the county or city by January 1, 1974.” The Introduction of the proposed Area Plan states, in part: “According to the General Plan Guidelines published by the State of California, an “Area Plan” is a planning tool that focuses on a particular region or community within the overall General Plan area. An Area Plan is adopted by resolution as an amendment to the General Plan as set forth in Section 65350 et. seq. of the California Government Code. It refines the policies of the General Plan as they apply to a smaller geographic area and is implemented by ordinances and other discretionary actions, such as zoning regulations and Community Standards Districts. The Area Plan must be internally consistent with the General Plan of which it is a part. An Area Plan need not address all of the required elements of the General Plan, when the overall General Plan satisfies these requirements.”

As evidenced by the above excerpts from the Zoning Ordinance, the California Government Code, and the proposed Area Plan, the County’s General Plan (General Plan) and its components, such as the currently adopted Area Plan and the proposed Area Plan, is the guiding land use document. The Zoning Ordinance and its components, such as the CSD, must be consistent with the General Plan and are intended to implement the General Plan and its components. That being said, the proposed Area Plan will not amend the CSD and no portion of the proposed Area Plan is inconsistent with the CSD. In fact, the proposed Area Plan acknowledges the CSD, as evidenced by the following policies:

Policy LU-1.2.8: In Castaic, promote expansion of neighborhood commercial uses to serve local residents; address traffic congestion; ensure compatibility highway-oriented commercial uses and nearby residential uses; *and maintain community character in accordance with the County’s Castaic Area Community Standards District.* (emphasis added)

Policy LU-1.2.9:

In Val Verde, protect the existing rural life-style and small town community character while providing residents with additional access to needed services; ensure compatibility between existing residential areas and the nearby landfill; *and maintain community character in accordance with the County's Castaic Area Community Standards District.* (emphasis added)

DEC 13 2010

December 10, 2010

**Department of Regional Planning
Attn: Mitch Glaser
13th Floor, Hall of Records
320 West Temple St.
Los Angeles, CA 90012**

Re: One Valley, One Vision

I, David Weston, oppose the change in zoning of the property listed below to one dwelling per 20 acres.

There are plans for a high school and two approved housing tracks that are going to be built next to my property. This zoning change will decrease my property value in the future and keep me or my heir from developing the land. Why should property owned by one family for 97 years (I'm a Romero heir, and the canyon was named after my great-grandfather) be down-zoned from the surrounding areas?

1

My property numbers are as follows-

- 3247 026 013**
- 3247 026 011**
- 3247 024 016**
- 3247 024 015**
- 3247 024 014**
- 3247 024 010**

Sincerely,



**David Weston
24620 Quigley Canyon Road
Newhall CA 91321
661-257-3662**

Letter No. D71

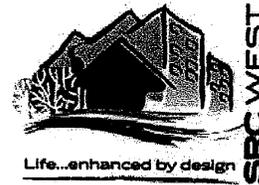
Letter from David Weston, December 10, 2010

Response 1

The commenter opposes the proposed Area Plan's land use designation of Rural Land 20 (RL20), with a maximum allowable residential density of 1 dwelling unit per 20 acres, for his six properties. The commenter states that there are plans for a high school and two approved housing tracts next to his property. The commenter expresses the opinion that the proposed RL 20 land use designation will decrease his property value in the future and keep him or his heir from developing his land.

The comment raises issues pertaining to the proposed Area Plan's land use designation of six particular properties that do not appear to relate to any physical effect on the environment. The comments regarding a decrease in property value and lack of development potential only express the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

DEC 27 2010



December 23, 2010

Los Angeles County Department of Regional Planning

Attn: Regional Planning Commission
Hall of Records-13th Floor
320 West Temple Street
Los Angeles, CA 90012

Re: Proposed Santa Clarita Valley One Valley One Vision Proposed Land Use
Designation affecting Vesting Tentative Tract Map 52796

Mr. Chairman and other members of the Regional Planning Commission,

We represent Vesting Tentative Tract Map 52796 which is an active entitlement request being processed through the County of Los Angeles. The property encompasses over 229 acres in the Pico Canyon area adjacent to Stevenson Ranch phases one thru three in the Santa Clarita Valley. The property consists of multiple parcels: APN #'s: 2826-020-019 thru 024 and 2826-020-030 thru 033.

Under the present Santa Clarita Areawide Plan this property enjoys a combination of land uses including Urban 2 (U-2), Hillside Management – Quarter Mile (HM ¼) and Hillside Management (HM). A site specific Slope Density Analysis, which is part of the existing case file, has calculated a maximum allowable density of two hundred sixty nine (269) dwelling units with a midpoint density of one hundred ninety six (196) dwelling units.

1

For the past decade SRC West has been master planning the various private land holdings in the Stevenson Ranch and Pico Canyon areas. This property has been part of that master planning and is one of the last of the properties left to be built. Due to its adjacency to the Stevenson Ranch and Southern Oaks communities and being part of an overall design program for the area this property acts in essence as an infill project. All necessary infrastructures to serve the project have been constructed to the projects boundary and have been sized to accommodate the maximum development capacity under the existing Santa Clarita Areawide Plan. This infrastructure includes:

- Water
- Sewer

SRC WEST, INC.

25322 Rye Canyon Road, Suite 201 * Santa Clarita, CA 91355 * Office: (661)257-6570 * Fax: (661)257-6577

- Storm Drain
- Electricity
- Gas
- Telephone
- Cable TV

Primary access to the area is by Pico Canyon Road which is a Major Arterial Highway as designated on the circulation elements of both the existing Santa Clarita Areawide Plan and the proposed OVOV. The Interstate 5 freeway is approximately one and a quarter miles from the property with north and south on and off ramps to Pico Canyon Road/ Lyons Avenue. Both Pico Canyon Road and additional public local circulation roads through the Southern Oaks Community have been constructed and stubbed to the project boundary. Once completed VTTM 52796 will continue the capital intensive extension of Pico Canyon Road through its property furthering the enactment of the circulation element as envisioned. In addition, VTTM 52796 will be completing major storm drain improvements of regional benefit further protecting existing downstream communities.

Our neighbors in the Southern Oaks and Stevenson Ranch communities have been developed at urban levels of density and are shown as H5 – Residential 5 (0-5 du/ac) or higher. Some segments of existing Stevenson Ranch are designated as H30 – Residential 30 (18-30 du/ac) and they are less than one half mile from VTTM 52796. The Southern Oaks community is our adjacent neighbor to the east and is designated H5 – Residential 5 (0-5 du/ac) and has developed lots as small as 7,000 square feet.

The latest Land Use Map for OVOV is significantly downgrading VTTM 52796 to RL20 – Rural Land 20 (1 du/ 20 acres) thus decreasing the properties maximum allowable density from 269 dwelling units to 11 dwelling units. This represents a ninety six (96) percent reduction in density. The Midpoint Density is being reduced from 196 dwelling units to 5 dwelling units which represents over a ninety seven (97) percent reduction in density. To further illustrate our point the adjacent Southern Oaks community represents a density one hundred 100 times greater than OVOV is showing for VTTM 52796.

A reduction of allowable density from that currently enjoyed for the VTTM 52796 property is unwarranted given the extensive planning and infrastructure development that has already occurred in the community, not to mention the regional benefit this project will give to the community by further completing arterial roadway and infrastructure proposed on the circulation element of the existing Areawide Plan and OVOV.

As we said, this property is in essence an infill property that completes a larger overall vision for the Stevenson Ranch and Pico Canyon areas that has been implemented by individual property ownerships over the last decade and more. Even though we are continuing to process a full entitlement request for this property now under the existing Santa Clarita Areawide Plan we have concerns with regard to the OVOV proposed Land Use Designations for the property. We continue to live in uncertain economic times where access to speculative

SRC WEST, INC.

25322 Rye Canyon Road, Suite 201 * Santa Clarita, CA 91355 * Office: (661)257-6570 * Fax: (661)257-6577

capital is difficult at best and nonexistent to most entities. In order to proceed with entitlements in this changed economy a developer must first earn the money for the extensive studies, analyses and processing before this work can be commissioned. Therefore processing times are extended and there can be potholes encountered along the way. The proposed OVOV Land Use designations, in our opinion, represent to extreme a transition from that of our existing neighbors as well as represent too great a jeopardy if for some reason uncertain short term processing stumbles befall us before the current entitlement request can be completed.

1

We request that the Regional Planning Commission deeply consider and honor our request to preserve our underlying land use and provide for a less abrupt transition of the existing urban densities of Stevenson Ranch and Southern Oaks. We request modifying the proposed land use for VTTM 52796 under OVOV to H2 Residential 2 for those areas closest to the existing Stevenson Ranch and Southern Oaks communities (APN 2826-020-019, 020, 021, 031 and 032) and RL 5 Rural Land 5 for the remaining parcels further from the existing communities. Please see the attached exhibit to see these recommended adjustments. This will reduce the maximum and midpoint densities for the project from that enjoyed under the current Santa Clarita Areawide Plan while still allowing this project area to properly integrate into this overall community the way it has been planned for years.

Sincerely,
SRC West, Inc.



Ron Druschen
President

w/ encl.

Cc: Mr. Richard J. Bruckner – LA County Dept. of Regional Planning
Mr. Mitch Glaser – LA County Dept. of Regional Planning
Mr. Nick Eftekhari – Oakridge Homes

SRC WEST, INC.
25322 Rye Canyon Road, Suite 201 * Santa Clarita, CA 91355 * Office: (661)257-6570 * Fax: (661)257-6577

4/6

VESTING TENTATIVE TRACT 52796

MAXIMUM ALLOWABLE DENSITY				
LAND USE	SLOPE CATEGORY	ALLOWABLE DENSITY (DU/AC)	ACRES	DWELLING UNITS
W	N/A	0	2.05	0
U-2 (CONVERTED FROM W)	N/A	6.6	1.5	9.90
U-2	N/A	6.6	29.07	191.86
HM 1/4 MILE	0-25%	1	11.43	11.43
	25-50%	1	46.59	46.59
	OVER 50%	0.05	95.2	4.76
HM	0-25%	0.5	0.85	0.43
	25-50%	0.5	5.02	2.51
	OVER 50%	0.05	37.59	1.88
MAXIMUM ALLOWABLE DENSITY				269

MIDPOINT DENSITY				
LAND USE	SLOPE CATEGORY	ALLOWABLE DENSITY (DU/AC)	ACRES	DWELLING UNITS
W	N/A	0	2.05	0
U-2 (CONVERTED FROM W)	N/A	5	1.5	7.5
U-2	N/A	5	29.07	145.35
HM 1/4 MILE	0-25%	0.6	11.43	6.86
	25-50%	0.6	46.59	27.95
	OVER 50%	0.05	95.2	4.76
HM	0-25%	0.35	0.85	0.30
	25-50%	0.35	5.02	1.76
	OVER 50%	0.05	37.59	1.88
MIDPOINT DENSITY				196



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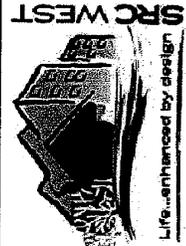
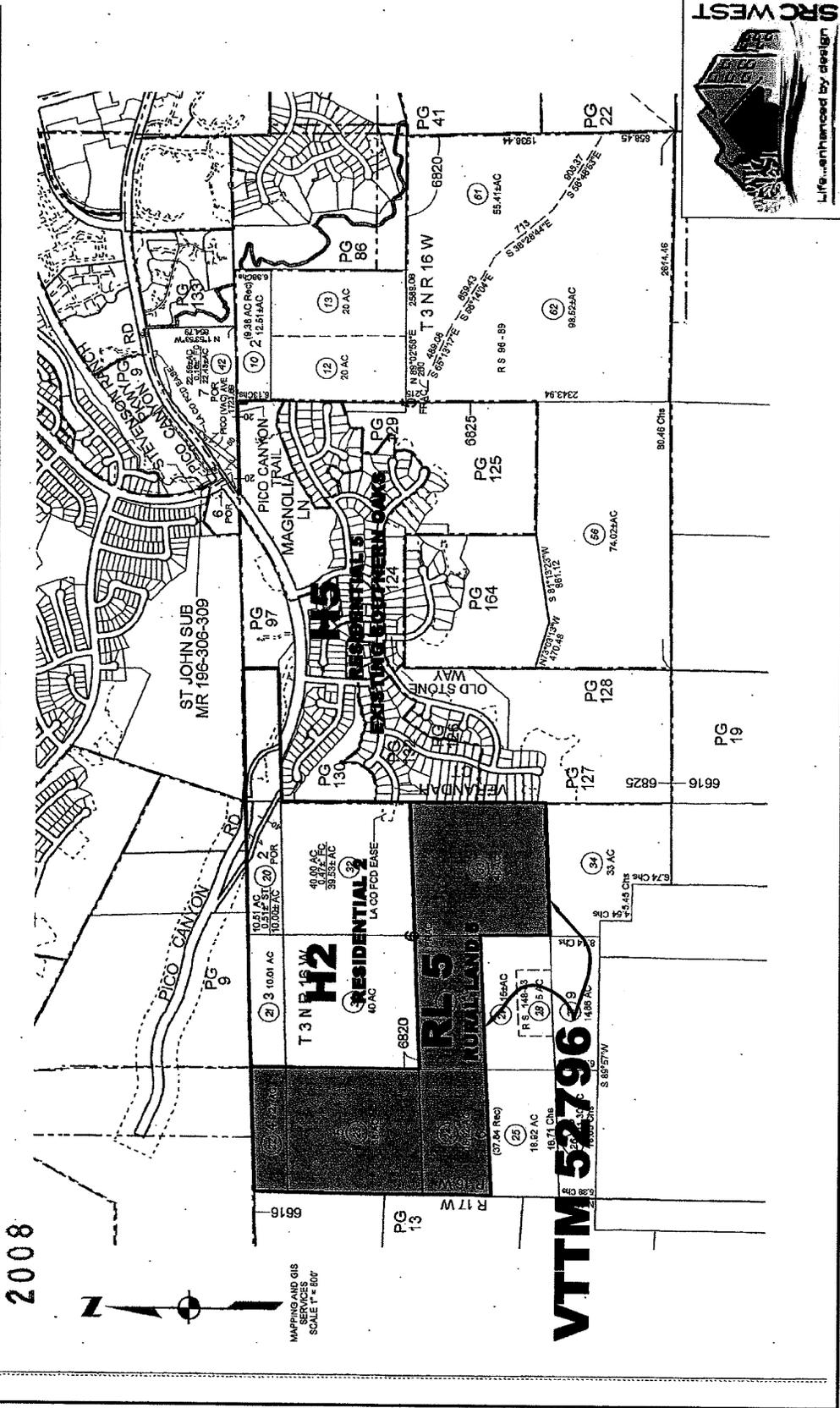
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Letter No. D72

Letter from SRC West, December 23, 2010

Response 1

The commenter states that the maximum 269 dwelling units allowed for Vesting Tentative Tract Map 52796 (VTTM 52796) under the currently adopted Santa Clarita Valley Area Plan (Area Plan) will be reduced to a maximum of 11 dwelling units under the proposed Area Plan. The comment states that the proposed Area Plan's land use designation of Rural Land 20 (RL20) is not consistent with the neighboring Southern Oaks and Stevenson Ranch communities and requests modifying the proposed land use designations for VTTM 52796 to Residential 2 (H2) for those parcels closest to the existing Stevenson Ranch and Southern Oaks communities and Rural Land 5 (RL5) for the remaining parcels. The commenter lists several other factors to support consideration of his request.

The comment raises issues pertaining to the proposed Area Plan's land use designation of VTTM 52796 that do not appear to relate to any physical effect on the environment. The comments regarding consistency with neighboring communities and other factors only express the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. It should be noted that the proposed Area Plan's Introduction includes the following language: "Completed applications filed prior to the effective date of this Area Plan shall be allowed to be reviewed for consistency with the previously adopted Area Plan. Projects may be maintained as originally approved provided the approval is still valid and has not expired. Any subsequent change(s) of use or intensity shall be subject to the policies of this Area Plan." Therefore, if VTTM 52796 is a completed application filed prior to the effective date of the proposed Area Plan, it shall be allowed to be reviewed for consistency with the current Area Plan, not the proposed Area Plan. Furthermore, if VTTM 52796 is approved, the project may be maintained as originally approved, provided that such approval is still valid and has not expired. VTTM 52796, if approved, would be subject to the policies of the proposed Area Plan only if changes of use or intensity are proposed after approval, provided that the Board of Supervisors adopts the aforementioned language in the proposed Area Plan's Introduction and provided that VTTM 52796 is a completed application filed prior to the effective date of the proposed Area Plan.

Reid Alexander
P.O. Box 1872
Camarillo, CA 93011
(805) 987-1640

JAN 10 2011

January 5, 2011

Via email and certified mail

Mitch Glaser, Principal Planner
Dept. of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

RE: One Valley One Vision General Plan Draft

Dear Mr. Glaser:

We own a 38 acre parcel of land just off of Sierra Hwy near Sand Canyon (APN 3231-009-010). The reason I am writing this letter is that the latest revision of the One Valley One Vision General Plan Draft has severely cut the originally proposed density that allowed 0.5 DU/ACRE (see attached). Luckily, we were made aware of this new proposed revision by chance conversation with our longtime family friend, Batta Vujicic, who suggested that we recheck the latest draft.

Our zoning is currently A1-10,000, which is approx. 4 DU/ACRE. The first draft of the O.V.O.V. General Plan had our parcel as UR1= 2.0 DU/ACRE (see attached) which we first saw about 6 months ago and at that time we were reluctant to accept cutting our density in half, but didn't feel like fighting the county. However, this latest revision cuts our density to 1/8 the density allowed by our zoning (88% less), thus potentially reducing the value of our property by 88%. This is neither reasonable nor acceptable!

Also, there is a dangerous situation at the Mint Canyon Elementary School (1600 Sierra Hwy, Canyon Country, CA 91351) which is adjacent to our parcel. The school has only one entrance/exit that it shares with Sierra Heights Mobile Estates trailer park off of Sierra Hwy (see attached aerial). In case of a fire, there would be a major traffic jam at the entrance with several hundred children and trailer park residents trying to evacuate with firefighters trying to enter. We have spoken with both Betsy Letzo (principal) and Nick Peter (Sulpher Springs School District) about the dangers of an evacuation with

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2 / 10

Reid Alexander
P.O. Box 1872
Camarillo, CA 93011
(805) 987-1640

only one entrance to the school. They expressed the same concern, especially in light on the recent fires in the area. We have suggested the possibility of sharing a bridge over our easement with a future development of our parcel that would give the school another access and help eliminate some of the present dangers. However, if this latest O.V.O.V. General Plan goes through this could potentially ruin any chance of our parcel being developed and a bridge being built that the school could share.

In order to develop this 38 acre parcel of land we would have to build a bridge connecting our parcel to Sierra Hwy over a 100' wide recorded easement designed by Andel Enginerring (see attached easement) that we own. This bridge could cost over 1 million dollars and if our density is cut to the latest revision of 0.5 DU/ACRE, this would only allow a maximum of 19 lots and would make developing this property uneconomically feasible and kill the value of this parcel turning this beautifully developable property into open space. Not only will this destroy our property value, but it will most likely ruin any chance of alleviating this dangerous situation with Mint Canyon Elementary School with a future bridge and alternate access to Sierra Hwy. We have expressed a willingness to work with the school and district in any future development of our property.

1

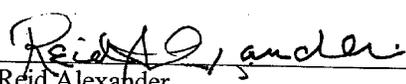
In closing, I would be willing to compromise and accept the original draft of the O.V.O.V. map which had our parcel as UR1= 2.0 DU/ACRE, but anything less would be unacceptable. I am turning 91 years old in April and fought in WWII against the Nazis to preserve and protect our freedoms and rights. It's a shame that now our freedoms and rights are constantly being challenged and taken away here at home by our government. Why does the county always down zone and take away property rights and never upgrade zoning and give more property rights? I think I am being very reasonable by being willing to accept the original version of the OVOV map which had our parcel as UR1= 2.0 DU/ACRE which cuts our density by 1/2. Your latest revision that cuts our density by 88% is not reasonable.

A closing thought, can you ever imagine the county giving a private elementary school with several hundred children a building permit with only one shared entrance/exit creating a trapped situation for the children in case of a fire...in a fire prone area?

3/10

Reid Alexander
P.O. Box 1872
Camarillo, CA 93011
(805) 987-1640

Sincerely,


Reid Alexander

CC: Michael D. Antonovich,
Los Angeles County Supervisor, 5th District, via email and US Mail.

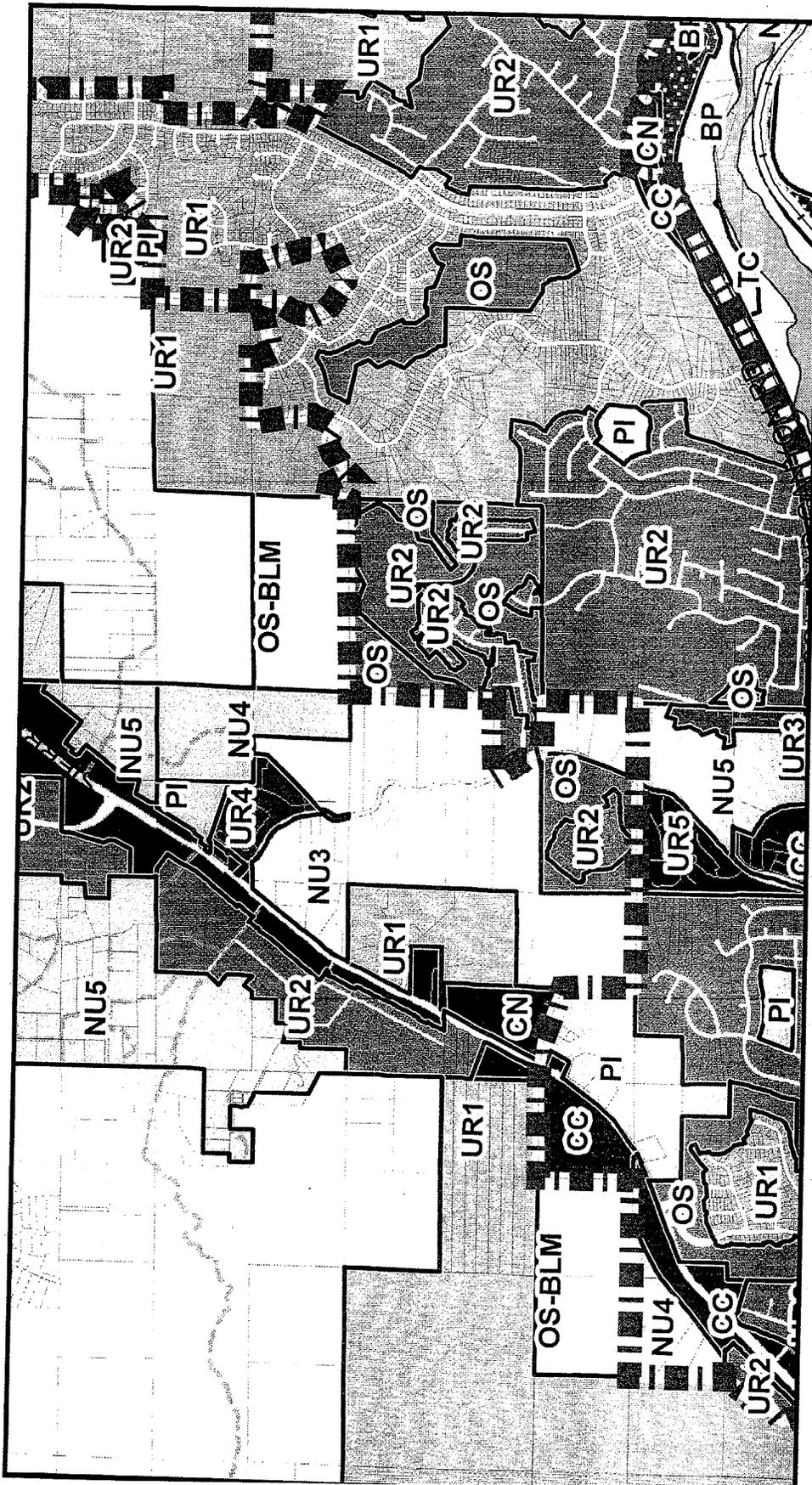
Details for: 3231009010

<u>APN</u>	3231009010
TRA Number	09149
Current Roll Year	2009
Current Land Value	377952
Improvement Year	2009
Improvement Value	0
Site Address	16074 BAKER CANYON RD
City, State, and ZIP	SAUGUS CA 913900000
Mailing Address	00000 PO BOX 1872
City, State, and ZIP	CAMARILLO CA 930110000
Recording Date	20060724
<u>Zoning Code</u>	LCA110000*
<u>Use Code</u>	010V
Last Sale Amount	0
Last Sale Date	20041001
<u>BLD1 Design Type</u>	
BLD1 QCS	
BLD1 Year Built	0
BLD1 No. of Units	0
BLD1 No. of Bedrooms	0
BLD1 No. of Baths	0
BLD1 SQ Feet	0
Legal Description	37.59 MORE OR LESS ACS COM AT NE COR OF
Legal Description (2nd)	SEC 11 T 4N R 15W TH S TO SE COR OF
Assessor Map	View Image

<http://regionalgis.co.la.ca.us/imf51/ext/regionalPlanning/jsp/searchRelated/searchResultPop...> 1/5/2011

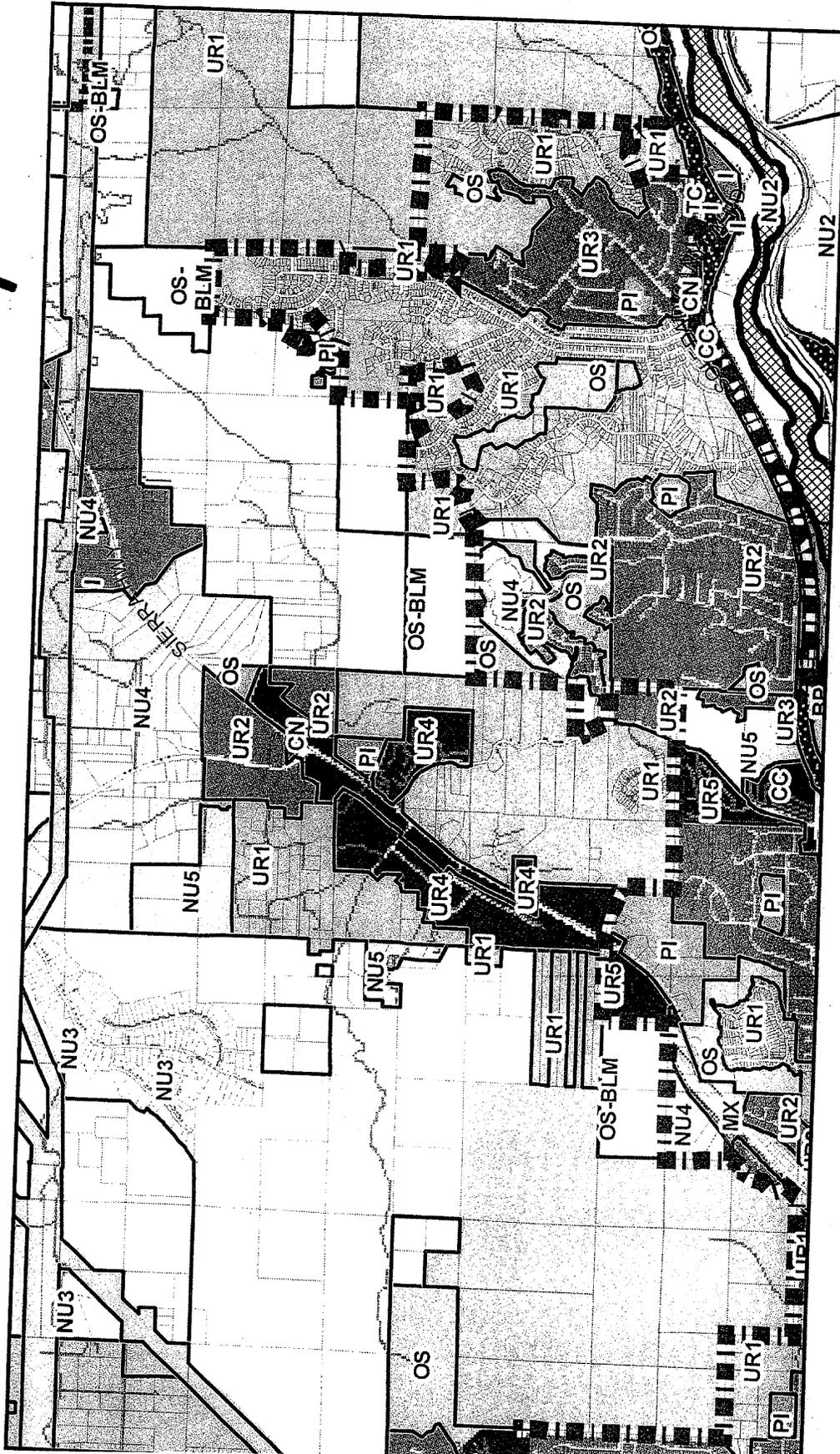
New OV0V Map - Sand Cyn 38A

01/9



NU4 = 0.5 DV/Acre

Orig. OVOV MAP → Sand Cyn 38A



UR 1 = 2.0 DU/ACRE

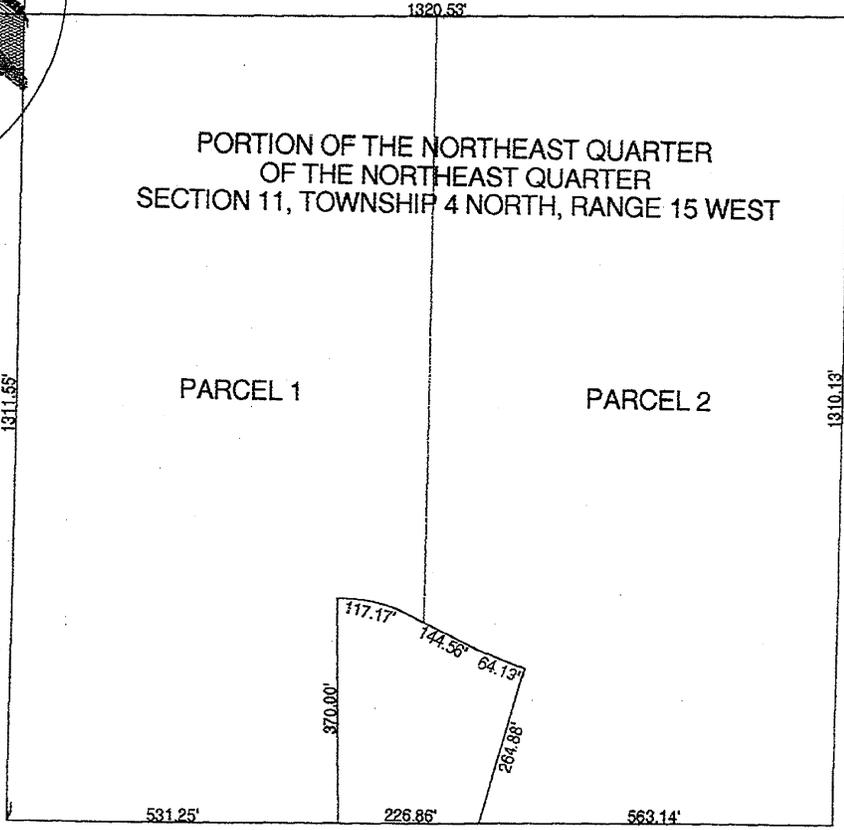
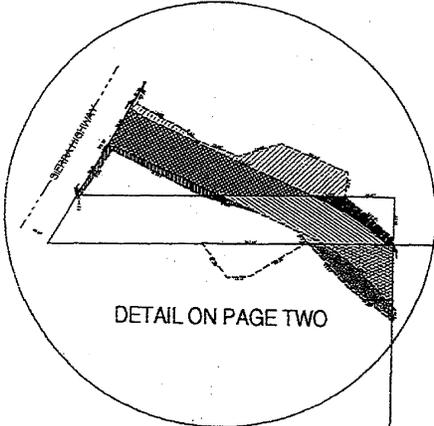
8110

LandAmerica Southland Title

7530 North Glenoaks Blvd. Burbank, California 91504
818-767-2000

LEGAL DESCRIPTION PLOT
ORDER NO. 16021997

APN 3231-09-010



This is neither a plat nor a survey. LandAmerica Southland Title makes no representation nor are we assuring any party as to the exact location of the easements burdening the land shown hereon. This map is being furnished as a convenience to show the approximate location of said easements only and no liability is assumed by LandAmerica Southland Title by reason of reliance hereon. Should precise location of said easements be required, it is advised that parties contact a licensed surveyor directly.

Letter No. D73

Letter from Reid Alexander, January 5, 2011

Response 1

The commenter opposes the proposed Area Plan's land use designation of Rural Land 2 (RL2) on his 38-acre property. The commenter states that the proposed RL2 land use designation would reduce the number of allowable dwelling units down to 19, which is not reasonable and would cause any development of his property to be economically infeasible.

The comment raises issues pertaining to the proposed Area Plan's land use designation of a particular property that do not appear to relate to any physical effect on the environment. The comments regarding the reasonableness of the proposed RL2 land use designation and that it would make development economically infeasible only express the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also expresses concern regarding access to the existing Mint Canyon Elementary School and states that, if his property were to be developed, he would be required to construct a bridge that the existing school could use. The commenter expresses his opinion that the proposed RL2 land use designation would prevent such a bridge from being constructed.

The comment raises economic, social, or political issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

ovov

From: Sadiq Ghias [sadiq@gpmusa.net]
Sent: Wednesday, January 05, 2011 5:50 PM
To: Adams, Marshall; Glaser, Mitch
Cc: ovov
Subject: Re: Zone changes

BY EMAIL
ovov@planning.lacounty.gov

Mr. Mitch Glaser
Department of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

RE: Plan Amendment and Zone Changes
APNs: 3209-010-034 (old # 3209-010-030), 3209-010-033 (old # 3209-010-026) and 3209-010-031

Dear Mr. Glaser:

When purchasing the property located at 7601 Soledad Canyon Road, Acton, Ca 93510, I was aware that it had A-2, C-3 and R-R zoning. I was also aware that it had an existing CUP for use as a campground. I was also aware that, due to the zoning, I could expand the existing use. For this, I paid a premium beyond just the value of the existing campground and the adjacent land.

My long term vision for this property included the possibility of additional uses which would improve the current use as a campground. Toward that end, I have already converted the campground from a stand-alone use to a franchise of the KOA system which has greatly improved the overall site. In the future, I see other uses which would serve both the campground and the area at large. For example, I may wish to incorporate an artists studio, bicycle shop, antique shop, etc.

These and other similar uses would be allowed under the existing zoning of C-3, but I don't see them as permitted use under the proposed zoning change. Therefore, the existing zoning for my parcels should remain "as is" so that I can use them as I expected when I purchased the property. Please note, any change in the permitted use would deprive me of my expectations and would mean that I paid extra money for something I cannot use.

Thank you for your attention to this matter.

Sadiq Ghias
CalWest Realestate Investments, LP.

1

Letter No. D74

Letter from Sadiq Ghias, January 5, 2011

Response 1

The commenter states that when he purchased his property on Soledad Canyon Road, he was aware that it had Heavy Agricultural (A-2), Unlimited Commercial (C-3), and Resort and Recreation (R-R) zoning with an existing use of a campground. The commenter states that he had plans of expanding the uses to serve both the campground and the area at large but that under the proposed zone change for his property, he does not see these additional uses as permitted. The commenter requests that the zoning for his parcels remain “as is” so that he can use them as he expected.

The comment raises issues related to the proposed Area Plan and its accompanying zone changes that do not appear to have any physical effect on the environment, as well as economic, social, or political issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. The proposed Area Plan’s Land Use Policy Map designates this property as Rural Land 20 (RL20). According to the proposed Area Plan’s Land Use Element, “Allowable uses in this designation include single-family homes at a maximum density of 1 dwelling unit per 20 acres, agriculture, equestrian uses, private recreation, and public and institutional facilities serving the local area. Specific allowable uses and development standards shall be determined by the underlying zoning designation.” County staff conducted a zoning consistency analysis to ensure that zoning is consistent with the proposed Area Plan’s land use designations and determined that A-2 zoning was consistent with the proposed RL20 land use designation, whereas C-3 and R-R zoning was not. Accordingly, the proposed Area Plan’s accompanying zone changes would change the zoning of the entire property to A-2. Section 22.24.120 of the County’s Zoning Ordinance lists “Campgrounds, picnic areas, trails with overnight camping facilities, including fishermen’s and hunters’ camps, but not including structures for permanent human occupancy” as a permitted use in the A-2 zone.

1/2

SCOPE

Santa Clarita Organization for Planning and the Environment
TO PROMOTE, PROTECT AND PRESERVE THE ENVIRONMENT, ECOLOGY
AND QUALITY OF LIFE IN THE SANTA CLARITA VALLEY
POST OFFICE BOX 1182, SANTA CLARITA, CA 91386



1-7-11

Attn: Mr. Mitch Glaser
LA County Dept. of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Mr. Jason Smisko
City of Santa Clarita
23920 Valencia blvd.
Santa Clarita, CA 91355

Re: OVOV City General Plan and County Area Plan Update

Dear Sirs:

After discussions with various leaders in the community about this plan and process, we agreed that the public process for these important planning documents seems to be flawed.

While the City claims to have been working on this plan for the last ten years, the lengthy hiatus in their chronology and recent passage of new planning laws makes it obvious that it was not a continuous process and early scoping meetings were perhaps not even applicable to the current effort. The numerous public outreach reach presentations by the City seem to have been merely a PowerPoint presentation of the City's plan, not an effort to gather input or hear public comment.

1

We understand and agree that the general plans for the Santa Clarita Valley area are sorely out of date. New planning concepts, tools and laws have become available and should be utilized to help inform and improve the planning process. A joint plan makes sense given the well-defined geographic area.

2

However, this is not a joint plan. It is two separate plans with environmental documents totally over 15,000 pages each. Hearings are not being held jointly and mitigation requirements proposed for the plan are not jointly enforceable.

3

These separate processes raise huge problems in our eyes for the enforceability of the goals your agencies are proposing. But perhaps even more important, it is very confusing to the public.

4

We are therefore writing to request that before these plans move forward, you agencies provide us and other members of the public that may request it a comparison of the two plans and the environmental documents including:

5

1. A list of consensus points in all areas of the plans
2. A list of areas where the two plans differ.

2/2

3. How different laws that cover different jurisdictions will be managed (for instance, will the County Development Monitoring System and Significant Ecological area rules continue to apply in County areas of Santa Clarita?)

6

4. How will the plans be jointly enforceable?

7

Additionally, most EIR's have a section entitled something like "Regulatory Setting" that describes the various federal, state and local permitting laws. The OVOV EIRs do not have such a section. Thus the public is left in the dark as to the specific requirements of, for instance, AB32 and SB375, as well as other State and Federal permitting processes such as storm water requirements, water supply disclosures, and endangered species protection.

8

We therefore request that at a minimum, a summary of the requirements of AB32 and SB375 and how they relate to this plan be provided to the interested public, including our organization, prior to the close of the commenting period.

9

We have noted that both entities seem to be rushing to approve large projects that would not comply with the precepts of these plans (reduced density in outlying areas, increased density in the City center). The County recently approved the 1260 Skyline Ranch area in a hard to reach outlying area that will create massive traffic problems. Tracts in Newhall Ranch seem to be moving forward without requirements for commuter train right of ways. The City is rushing to annex additional areas of the outlying Tesoro del Valle project to enable development there. Applications are being "grandfathered" in and density bonuses and increases are being granted to those developers who attend hearings.

10

The population increase predicted by the earlier plans has not yet been reached and the housing market continues in a downturn from which it may not recover for many years into the future, due in part to over-building in this area. There is certainly time to pause in order to offer a plan that everyone understands and that is enforceable.

11

We therefore request that you 1) provide the information listed above and extend the comment period an appropriate amount of time to allow review of the requested information; 2) that you place a moratorium on new applications and approvals until the plan is complete; 3) that the two plans coordinate their dates and processes so that the comment periods end at the same time and that some joint meetings are held.

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Thank you in advance for your consideration of these requests.

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Sincerely,

Lynne Plambeck
President

Letter No. D75

Letter from Santa Clarita Organization for Planning and the Environment,
January 7, 2011

Response 1

The comment expresses the opinions of the commenter regarding insufficient efforts by City of Santa Clarita (City) staff and Los Angeles County (County) staff in gathering and hearing public input during the joint "One Valley One Vision" (OVOV) planning effort. The commenter is directed to Section 1.0, Introduction, Table 1.0-1 pages 1.0-3 through 5 in the Revised Draft EIR, which lists meetings scheduled and held to discuss the OVOV planning effort. The City and County hosted joint workshops throughout the Santa Clarita Valley in 2001, 2007, and 2008. County staff attended meetings of the Agua Dulce Town Council and Castaic Area Town Council in 2009 and has continued to communicate with residents throughout the Santa Clarita Valley's unincorporated communities. Prior to the County Regional Planning Commission's first public hearing in October 2009, the Department of Regional Planning sent a notice to each property owner within the unincorporated Santa Clarita Valley (over 30,000 notices) although it was not legally required to do so. As of the date the County's Final EIR was released, the Regional Planning Commission had held six public hearings regarding the proposed Area Plan, had received over 150 comment letters, and had heard testimony from dozens of individuals and organizations. In addition, the County's proposed Area Plan, the Draft EIR, and the Revised Draft EIR were made available on the Internet and at local libraries. In summary, every effort has been made to ensure a wide-ranging, inclusive, and transparent public process. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. The comment, however, does not raise an environmental issue, and thus no further response is required.

Response 2

The comment restates information contained in the Revised Draft EIR with regard to the need for an updated City General Plan and an updated County Santa Clarita Valley Area Plan and the reasoning behind a joint OVOV planning effort and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 3

The commenter states that, in fact, OVOV is not a joint planning effort in that there are two separate EIR's that have been prepared, one for each jurisdiction. The commenter states that because the City and County are not conducting joint hearings that the mitigation requirements in the County's EIR are not enforceable by the City, and vice versa. The County and City are, and will continue to be, separate

jurisdictions with separate decision-making bodies. The County will be responsible for implementing and enforcing the proposed Area Plan, including the mitigation measures identified in the County's EIR, within its jurisdiction. The City will be responsible for implementing and enforcing its General Plan, including the mitigation measures identified in the City's EIR, within its jurisdiction. Since the two jurisdictions' documents are exceedingly similar, implementation and enforcement should be consistent across the jurisdictions. The Land Use Element of the County's proposed Area Plan includes several implementation actions that will require the County to closely coordinate with the City to ensure consistent implementation and enforcement after the updated documents are adopted.

Response 4

The commenter raised concerns regarding the enforceability of the proposed goals and that the separate processes are confusing to the public. With regard to the issue of enforceability, please see **Response 3** above. With regard to the issue of the project being confusing to the public, please see **Response 1**, which outlines the numerous opportunities that the public has had to ask questions and make comments regarding the OVOV planning effort. As of the date the County's Final EIR was released, the Regional Planning Commission had held six public hearings regarding the proposed Area Plan, had received over 150 comment letters, and had heard testimony from dozens of individuals and organizations. The County's proposed Area Plan, the Draft EIR, and the Revised Draft EIR were made available on the Internet and at local libraries. In summary, every effort has been made to ensure a wide-ranging, inclusive, and transparent public process.

Response 5

The commenter requested a comparison of the City's proposed General Plan and the County's proposed Area Plan prior to each Plan moving forward. The proposed Plans are exceedingly similar. The primary difference is that the County's proposed Area Plan does not include Housing and Economic Development Elements, as those subject matters are addressed in the Countywide General Plan, which is also in the process of being updated. County staff prepared charts that compare the City's Draft General Plan, released in September 2010, and the County's Revised Draft Santa Clarita Valley Area Plan, released in November 2010, which are available on the Internet:

Chart with differences between goals, objectives, and policies: http://planning.lacounty.gov/assets/upl/project/ovov_chart_city-goals.pdf

Chart with differences between land use designation descriptions: http://planning.lacounty.gov/assets/upl/project/ovov_chart_city-plans.pdf

County staff did not prepare charts that compare the City's Draft EIR, released in September 2010, to the County's Revised Draft EIR, released in November 2010. However, those documents are also exceedingly similar and they reach the same conclusions with regard to potentially significant environmental impacts. There are some differences with regard to mitigation measures, which can be evaluated by comparing the Executive Summaries of both documents, which are available on the Internet:

Executive Summary for the City's Draft EIR: http://santa-clarita.com/ovov/_pdf/draft_eir/0_2_ExcutiveSummaryrev091410.pdf

Executive Summary for the County's Revised Draft EIR: http://planning.lacounty.gov/assets/upl/project/ovov_deir-0-1-executive-summary.pdf

Response 6

The commenter asked how the different laws that govern each jurisdiction will be managed (e.g., will the County's Development Monitoring System and Significant Ecological Area rules continue to apply in the unincorporated areas of the Santa Clarita Valley. The County's proposed Area Plan does not include amendments to the policies in the Countywide General Plan related to the Development Monitoring System. Those policies will remain in effect until such time that the Countywide General Plan is updated. The proposed Area Plan does not include amendments to the regulations in the County Zoning Ordinance related to Significant Ecological Areas (Zoning Ordinance Section 22.56.215). Those regulations will remain in effect until such time that they are amended. However, the proposed Area Plan includes significant expansion of the Significant Ecological Areas within the unincorporated areas of the Santa Clarita Valley.

Response 7

The commenter asked if the County's proposed Area Plan and the City's proposed General Plan would be jointly enforceable. The County and City are, and will continue to be, separate jurisdictions with separate decision-making bodies. The County will be responsible for implementing and enforcing the proposed Area Plan, including the mitigation measures identified in the County's Final EIR, within its jurisdiction. The City will be responsible for implementing and enforcing the proposed General Plan, including the mitigation measures identified in the City's Final EIR, within its jurisdiction. Since the two jurisdictions' documents are exceedingly similar, implementation and enforcement should be consistent across the jurisdictions. The Land Use Element of the County's proposed Area Plan (pg. 68) includes several implementation actions that will require the County to closely coordinate with the City to ensure consistent implementation and enforcement after the County's proposed Area Plan and the City's proposed General Plan adopted.

Response 8

The commenter stated that most EIRs have a regulatory section outlining which federal, state, and local laws apply. Although the County's Revised Draft EIR does not have a "Regulatory Setting" section, most of the environmental analysis sections have a "Regulatory Framework," "Regulatory Context," or "Regulatory Setting" subsection. The commenter is directed to the following pages within the Revised Draft EIR outlining the applicable regulatory laws and rules which apply to the proposed Area Plan:

Section 3.1 – Land Use – pg. 3.1-12 to 3.1-15

http://planning.lacounty.gov/assets/upl/project/ovov_2010-eir-3-1-land-use-111710.pdf

Section 3.2 – Transportation and Circulation – pg. 3.2-23 to 3.2-24

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-2-transportation-circulation-111710.pdf

Section 3.3 – Air Quality – pg. 3.3-25 to 3.3-34

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-3-air-quality.pdf

Section 3.4 – Global Climate Change – pg. 3.4-12 to 3.4-33

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-4-global-climate-change.pdf

(Note: This is where Assembly Bill 32 and Senate Bill 375 are discussed)

Section 3.5 – Agricultural Resources -- None

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-5-ag-resources.pdf

(Note: Although this section does not have such a subsection, it appears that information regarding the regulatory framework is provided in the "Existing Conditions" subsection -- pg. 3.5-1 to 3.5-15)

Section 3.6 – Aesthetics – pg. 3.6-18 to 3.6-20

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-6-aesthetics.pdf

Section 3.7 – Biological Resources – pg. 3.7-46 to 3.7-50

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-7-biological-resources.pdf

Section 3.8 – Cultural Resources – pg. 3.8-11 to 3.8-14

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-8-cultural-resources.pdf

Section 3.9 – Geology, Soils, Seismicity – pg. 3.9-27 to 3.9-29

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-9-geo-soil-seismicity.pdf

Section 3.10 – Mineral Resources – pg. 3.10-5 to 3.10-6

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-10-mineral-resources.pdf

Section 3.11 – Hazards and Hazardous Materials – pg. 3.11-16 to 3.11-21

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-11-hazards-hazardous-material-111710.pdf

Section 3.12 – Hydrology and Water Quality – pg. 3.12-16 to 3.12-20

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-12-hydrology.pdf

Section 3.13 – Water Service – pg. 3.13-108 to 3.13-112

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-13-water-service.pdf

Section 3.14 – Community Services – pg. 3.14-10 to 3.14-11; 3.14-19; 3.14-28 to 3.14-30

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-14-community-services.pdf

Section 3.15 – Public Services – pg. 3.15-8 to 3.15-9; 3.15-17 to 3.5-18; 3.15-28 to 3.15-29; 3.15-40 to 3.15-44; 3.15-56

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-15-pub-services.pdf

Section 3.16 – Parks and Recreation – pg. 3.16-17 to 3.16-19

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-16-parks-recreation.pdf

Section 3.17 – Utilities and Infrastructure – pg. 3.17-10 to 3.17-12; 3.17-22 to 3.17-25; 3.17-38 to 3.17-41

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-17-utilities-infrastructure.pdf

Section 3.18 – Noise – pg. 3.18-19 to 3.18-27

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-18-noise.pdf

Section 3.19 – Population and Housing – pg. 3.19-4 to 3.19-5

http://planning.lacounty.gov/assets/upl/project/ovov_2010-deir-3-19-population-housing.pdf

Response 9

The commenter requested that a summary of the requirements of Assembly Bill 32 and Senate Bill 375 be provided to the public prior to the close of the comment period for the Revised Draft EIR. Please see **Response 8** above, noting that the information requested is included in the Revised Draft EIR, which was made available throughout the comment period for the Revised Draft EIR.

Response 10

The commenter stated that the County and the City have both recently approved large development projects that the commenter believes are not consistent with the County's proposed Area Plan and the City's proposed General Plan that were both developed through the joint OVOV planning effort. The commenter also adds that applications are being "grandfathered" and annexations are occurring to allow development. The comment expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed

Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 11

The commenter believes that there is time to pause and delay consideration of the proposed Area Plan to ensure that everyone understands the proposed Area Plan and how it will be implemented and enforced, as the population predictions of earlier plans have not been realized and the economy is in a down-turned state. With regard to the issue of enforceability, please see **Response 3** above. With regard to the issue of the proposed Area Plan being confusing to the public, please see **Response 1** above, outlining the numerous opportunities that the public has had to ask questions about the OVOV planning effort and the proposed Area Plan.

Response 12

The commenter requested that the review period for the Revised Draft EIR be extended. The comment period for the County's Revised Draft EIR began on November 22, 2010 and ended on January 24, 2011. The commenter requested that the Department of Regional Planning provide information related to the differences between the County documents and the City documents, as well as information related to various federal, state, and local laws that are relevant to the project. The commenter also requested that the comment period be extended to allow for review of the requested information. The requested information was made available at the beginning of the comment period (please see **Response 5** and **Response 8** above). Throughout the comment period, the requested information was available on the Internet at <http://planning.lacounty.gov/ovov> and at the County libraries in Acton/Agua Dulce, Castaic, Newhall, and Valencia.

Response 13

The comment requested that the County place a moratorium on new applications and approvals until the proposed Area Plan is adopted and raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 14

The comment requested that the County and City coordinate their hearing dates and review processes and raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 15

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR. Note: County staff responded to the commenter's request on February 2, 2011.

1/1

Valerie Thomas

JAN 10 2011

PO Box 220907
Newhall, CA 91322
(661) 755-3793 cell (661) 254-2406 fax

January 7, 2011

Mr. Mitch Glaser
L.A. County Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Re: Santa Clarita Area General Plan Update (One Valley One Vision)

Dear Mr. Glaser:

City and County staffs have been working on One Valley One Vision for the better part of a decade. Shortly after the County's version was made public, it was withdrawn because of concerns raised by the California Attorney General's office.

Santa Clarita's version underwent similar revisions.

The public had virtually no input in these revisions. Therefore I ask for a detailed comparison of both sets of City and County documents as well as an overlay showing the changes in current versus proposed Land Use designations prior to the close of the Public Comment Period.

Sincerely,



Valerie Thomas

Cc: Los Angeles County Supervisors
Santa Clarita City Council
Santa Clarita Planning Commission
City Manager Ken Pulskamp
Santa Clarita Planning Director, Lisa Webber
Mr. Paul Brotzman

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2
3

Letter No. D76

Letter from Valerie Thomas, January 7, 2011

Response 1

The commenter restates information contained in the Revised Draft EIR concerning the decade-long OVOV planning effort and concerning the fact that the County's initial Draft EIR was revised and re-circulated after County staff received comments submitted by the Attorney General's Office and other stakeholders. The comment does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 2

The commenter states that the City of Santa Clarita's (City's) Draft EIR underwent similar revisions after County staff received comments on its initial Draft EIR submitted by the Attorney General's Office and other stakeholders. While City staff internally revised its Draft EIR after County staff received the aforementioned comments, the City had not yet released its Draft EIR for public review when County staff received the aforementioned comments. The comment does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 3

The commenter stated that the public had no input into the revisions described in **Response 1** and **Response 2**, above. The commenter also requested a detailed comparison of both County and City documents as well as a map showing the proposed land use designation changes in the County's proposed Area Plan and the City's proposed General Plan prior to the close of the comment period for the Revised Draft EIR. County staff prepared charts that compare the County's Draft Area Plan, released in September 2009, to the County's Revised Draft Area Plan, released in November 2010, which are available on the Internet, as follows:

Chart with differences between goals, objectives, and policies:

http://planning.lacounty.gov/assets/upl/project/ovov_chart_county-goals.pdf

Chart with differences between land use designation descriptions:

http://planning.lacounty.gov/assets/upl/project/ovov_chart_county-plans.pdf

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

County staff also prepared charts that compare the City's Draft General Plan, released in September 2010, to the County's Revised Draft Area Plan, released in November 2010, which are also available on the Internet, as follows:

Chart with differences between goals, objectives, and policies:

http://planning.lacounty.gov/assets/upl/project/ovov_chart_city-goals.pdf

Chart with differences between land use designation descriptions:

http://planning.lacounty.gov/assets/upl/project/ovov_chart_city-plans.pdf

A map showing the proposed land use designation changes in the County's proposed Area Plan can be accessed through OVOV-NET, an interactive Geographic Information System that includes the County's existing and proposed land use designations, as well as other geographic information, which is available on the Internet at <http://planning.lacounty.gov/ovovnet>. In addition, Section 3.1 of the County's Revised Draft EIR includes a land use designation change map (Figure 3.1-3). Section 3.1 of the Revised Draft EIR is also available on the Internet:

http://planning.lacounty.gov/assets/upl/project/ovov_2010-eir-3-1-land-use-111710.pdf

The aforementioned documents, as well as other documents related to the proposed Area Plan, were made available at the beginning of the comment period for the Revised Draft EIR on the Internet at <http://planning.lacounty.gov/ovov>. The documents were also made available at the beginning of the comment period for the Revised Draft EIR at the County libraries in Acton/Agua Dulce, Castaic, Newhall, and Valencia. The documents were available throughout the comment period for the Revised Draft EIR.

Note: County staff responded to the commenter's request on January 11, 2011, which was well in advance of the close of the public comment period for the Revised Draft EIR on January 24, 2011.

1/1

JAN 10 2011

27143 Crystal Springs Road
Canyon Country, CA 91387

January 7, 2011

Mr. Mitch Glaser
Los Angeles County Dept. of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

Re: Santa Clarita Area Plan Update (OVOV), Project #R2007-01226-(5),
Plan Amendment 2009-00006-(5), Zone Change #2009-0009-(5),
Environmental Assessment #2009-00080-(5)

Dear Mr. Glaser:

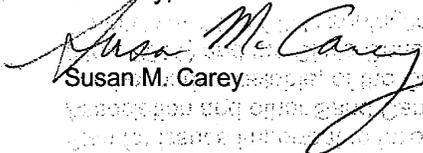
I am a resident of Canyon Country and am reviewing the above document, and the City of Santa Clarita's Draft Program EIR for its proposed One Valley One Vision General Plan for issues important to fellow residents of Crystal Springs Ranch Homeowners Association and other Sand Canyon residents. Is there a comparison available, or can one be made available, of the County's Revised Draft Santa Clarita Valley Area Plan (Nov. 2011) and the City's General Plan Update, including a map comparing the County's and the City's zoning/land use designations for the Santa Clarita Valley?

1

The massive amount of material in both Plans makes it very difficult for members of the public to review a single Plan, let alone both Plans – and finding the differences between the Plans in order to analyze them and make effective comments is even more difficult. Differences in zoning and land use designations between the two Plans is of special concern to residents of my area because we are impacted by many projects involving annexation of LA County land into the City. Please let me know where I can find a comparison of the Plans including such a map on the Internet, or such a comparison does not exist; please let me know if one can be made available as soon as possible for the public to use in reviewing these highly-significant documents.

Thank you.

Sincerely,


Susan M. Carey

Letter No. D77

Letter from Susan M. Carey, January 7, 2011

Response 1

The commenter states that she is reviewing the proposed Area Plan, the Revised Draft EIR for the County's proposed Area Plan, and the Draft EIR for the City of Santa Clarita's (City) proposed General Plan for issues important to fellow residents of Crystal Springs Ranch Homeowners Association and other Sand Canyon residents. The commenter requests documents that compare the City's proposed General Plan, which was released in September 2010, to the County's proposed Revised Draft Santa Clarita Valley Area Plan, which was released in November 2010, including a map comparing the City and County's land use designations for the Santa Clarita Valley. The commenter then states that the massive amount of material in both plans makes it very difficult for members of the public to review both plans and find the differences between both plans. The commenter adds that differences in zoning and land use designations are of special concern to residents of her area because of pending annexations of County territory into the City.

Documents that compare the City's proposed General Plan, which was released in September 2010, to the County's proposed Revised Draft Santa Clarita Valley Area Plan, which was released in November 2010, are available on the Department of Regional Planning's Web Site, as follows:

Chart with differences between goals, objectives, and policies:

http://planning.lacounty.gov/assets/upl/project/ovov_chart_city-goals.pdf

Chart with differences between land use designation descriptions:

http://planning.lacounty.gov/assets/upl/project/ovov_chart_city-plans.pdf

The Land Use Policy Maps in the City's proposed General Plan, which was released in September 2010, and the County's proposed Revised Draft Santa Clarita Valley Area Plan, which was released in November 2010, are consistent with each other. The primary difference between the two Land Use Policy Maps is the naming of the land use designations. For example, the Rural Land 1 (RL1) designation on the County's Land Use Policy Map is named Non-Urban 5 (NU5) on the City's Land Use Policy Map. The differences between the names and descriptions of the land use designations are contained in the second chart cited above.

The County has prepared a Zoning Map that would be adopted concurrently with the proposed Area Plan. The Zoning Map is available on the Department of Regional Planning's Web Site:

http://planning.lacounty.gov/assets/upl/project/ovov_proposed-zoning-map.pdf

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

The City does not have zoning for unincorporated County areas, as those areas are outside of its jurisdiction. When the City proposes to annex an unincorporated County area, it establishes “pre-zoning” for that area.

The aforementioned documents, as well as other documents related to the Santa Clarita Valley Area Plan Update, were made available at the beginning of the comment period for the County’s Revised Draft EIR on the Department of Regional Planning’s Web Site at <http://planning.lacounty.gov/ovov>. The documents are also made available at the beginning of the comment period for the County’s Revised Draft EIR at the County libraries in Acton/Agua Dulce, Castaic, Newhall, and Valencia. OVOV-NET, an interactive Geographic Information System (GIS) that includes the County’s existing and proposed land use designations and zoning designations, as well as other geographic information, may be accessed at <http://planning.lacounty.gov/ovovnet>.

Note: County staff responded to the commenter’s request on January 11, 2011, which was well in advance of the close of the public comment period for the Revised Draft EIR on January 24, 2011.

1/1

January 21, 2011

Mr. Mitch Glaser
LA County Dept. of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

Re: OVOV County Area Plan Update

Dear Mr. Glaser:

After review of the Los Angeles County OVOV Draft EIR and General Plan Land Use Element, we submit that the plan should more clearly address the following concerns:

- Acknowledge current economic conditions, the on-going downturn in the housing market and the over-building in our area, and **reduce** proposed build-out population numbers. The current projections would substantially degrade the quality of life in the Santa Clarita Valley.
- Preserve the character and density (residential dwelling units per acre) of existing neighborhoods and provide adequate buffers and transitions.
- Ensure adequate access to all residential areas at LOS "C" or better, using peak hour analysis.
- Follow the City's lead and adopt the California Model Floodplain Management Ordinance issued by the California Department of Water Resources to protect new development as well as upstream and downstream neighborhoods.
- Respect all "blue line" streams from re-directing flow or channelization.
- Neighborhood services contiguous to residential areas shall encourage "walkability" and follow best management land-planning principles.
- All parks and walkways shall follow ADA recommendations to encourage access for seniors and the disabled.
- Define "periodically," as in "periodically check traffic levels, traffic accident patterns, physical conditions of street system..." with specificity. (i.e., annually, every two years).
- Seek economic engine with high level of jobs whose pay is commensurate with the local cost of living so that people may truly work where they live and avoid long commutes.
- Develop standards for inclusionary housing to encourage and allow all age and economic levels to live in proximity. OVOV Land Use Element should include incentives to encourage developers to do more than give lip service to such commitments.
- Ensure all guidelines adopted are consistently enforced in all new development or renovation of existing structures.

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Thank you for your consideration of these requests.

Sincerely,

Valerie and Glenda

Valerie Thomas & Glenda Bona,
Santa Clarita residents

Letter No. D78

Letter from Valerie Thomas and Glenda Bona, January 21, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The commenter raises economic issues that do not appear to relate to any physical effect on the environment. The commenter also provides an opinion that current population projections would degrade the quality of life in the Santa Clarita Valley if they were to be realized, so those population projections should be reduced. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 3

The commenter raises issues concerning character and density of existing neighborhoods that do not appear to relate to any physical effect on the environment. The commenter does not raise any specific issue regarding a specific neighborhood and therefore, a specific response cannot be provided nor is one required. However, it should be noted that Objectives LU-1 and LU-2 in the proposed Area Plan, as well as the policies listed under those objectives, address issues concerning character and density of existing neighborhoods. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter addresses general subject areas concerning adequate buffers and transitions, which received extensive analysis in Section 3.7, Biological Resources of the Revised Draft EIR. The commenter does not raise any specific issue regarding that analysis and, therefore, a more specific response cannot be provided nor is one required. However, it should be noted that Objectives LU-1, LU-2, and LU-3 in the proposed Area Plan, as well as the policies listed under those objectives, address general subject areas concerning adequate buffers and transitions. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 4

The commenter requests that the proposed Area Plan ensure access to all residential areas at a Level of Service (LOS) of "C" or better, using peak hour analysis. According to the County's Department of Public Works,¹ the proposed Area Plan or an individual development project would cause an increase in traffic

¹ County of Los Angeles Department of Public Works, *County of Los Angeles Traffic Impact Analysis Report Guidelines*, (1997), p. 5 and 6.

that is substantial in relation to the existing traffic load and capacity of the street system if the proposed Area Plan or an individual development project would:

- Increase the Volume/Capacity (V/C) ratio or Intersection Capacity Utilization (ICU) by at least one percentage point (0.01) at any location where the final V/C ratio or ICU is 0.91 or greater (LOS E or F).
- Increase the V/C ratio or ICU by at least two percentage points (0.02) at any location where the final V/C ratio or ICU is between 0.81 and 0.90 (LOS D).

Increase the V/C ratio or ICU by at least four percentage points (0.04) at any location where the final V/C ratio or ICU is between 0.71 and 0.80 (LOS C).

These standards do not require that all roadway segments and intersections operate at LOS C or better. These standards would be applied to individual development projects within the unincorporated Santa Clarita Valley.

Response 5

The commenter suggests that the County adopt the California Model Floodplain Management Ordinance to protect new development as well as upstream and downstream neighborhoods. The following policies in the proposed Area Plan would protect new and existing development from flooding:

Policy S 2.1.1: On the Land Use Map, designate appropriate areas within the floodplain as open space for multi-use purposes, including flood control, habitat preservation, and recreational open space. Development in the floodplain will require mitigation as deemed necessary by the reviewing authority.

Policy S 2.2.1: Prepare and maintain maps of floodways and floodplains based on information from the Federal Emergency Management Agency (FEMA) and other appropriate sources in order to qualify for FEMA's National Flood Insurance Program.

Policy S 2.3.1: Implement drainage master plans designed to handle storm flows from the 100-year storm.

Policy S 2.4.1: Require that new development comply with FEMA floodplain management requirements.

Policy S 2.4.2: On the Land Use Map, restrict the type and intensity of land use in flood-prone areas, or require flood-proof construction, as deemed appropriate.

Consequently, no further response is required.

Response 6

The commenter requests that the proposed Area Plan respect all “blue line” streams by prohibiting the redirection of flow or channelization.

Policy CO 3.1.6 in the proposed Area Plan addresses this request:

Policy CO 3.1.6: On development sites, preserve and enhance natural site elements including existing water bodies, soil conditions, ecosystems, trees, vegetation, and habitat, to the extent feasible.

Consequently, no further response is required.

Response 7

The commenter raises land use issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. However, it should be noted that Area Plan includes the following policies that address these land use issues:

Policy LU 2.1.2: On the Land Use Map, integrate land use designations in a manner that promotes healthy, walkable communities, by providing an appropriate mix of residential and service uses in proximity to one another.

Policy LU 3.2.1: Require provision of adequate walkways in urban residential neighborhoods that provide safe and accessible connections to destinations such as schools, parks, and neighborhood commercial centers.

Policy LU 5.1.1: Require safe, secure, clearly delineated, adequately illuminated walkways and bicycle facilities in all commercial and business centers.

Policy LU 5.1.2: Require connectivity between walkways and bikeways serving neighborhoods and nearby commercial areas, schools, parks, and other supporting services and facilities.

Policy LU 5.2.2: Provide for location of neighborhood commercial uses in proximity to the neighborhoods they serve, to encourage cycling and walking to local stores.

Response 8

The commenter raises regulatory issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. However, it should be noted that the County is required to comply with the Americans with Disabilities Act, as are all individual development projects that are approved by the County.

Response 9

The commenter requested a definition of “periodically” as referenced in “Policy C 2.1.5: Periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program.”

County staff concurs that the term “periodically” could be better defined. In response, County staff has changed this policy to read as follows: Policy C 2.1.5: At the time of project review, monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program.

Response 10

The commenter raises economic issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. However, it should be noted that Objectives LU-4.1, LU-4.2, LU-4.3, LU-4.4, and LU-4.5 in the proposed Area Plan, as well as the policies listed under those objectives, address economic issues.

The commenter also addresses general subject areas regarding reduction of long commutes, which received extensive analysis in Section 2.0, Project Description and Section 3.2, Transportation/Circulation, in the Revised Draft EIR. The commenter does not raise any specific issue regarding that analysis and, therefore, a more specific response cannot be provided nor is one required. However, it should be noted that Objectives C-1.1 and C-1.2 in the proposed Area Plan, as well as the policies listed under those objectives, address general subject areas regarding reduction of long commutes. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 11

The comment raises issues pertaining to the Land Use Element and inclusionary housing that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. However, it should be noted that the Housing Element of the Countywide General Plan, adopted by the Board of Supervisors on August 5, 2008 and certified by the State Department of Housing and Community Development on November 6, 2008, includes an Inclusionary Housing Program as an implementation measure (please refer to Program 10, pg. 11-12). The adopted Housing Element is available on the Internet:http://planning.lacounty.gov/assets/upl/project/housing_20090126-housing-element.pdf

Response 12

The comment raises issues pertaining to the enforcement of guidelines that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. However, it should be noted that the County is required to enforce all of its land use policies and guidelines, including those in the proposed Area Plan, in a consistent manner (please refer to the implementation measures in the proposed Area Plan's Land Use Element).

Response 13

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1/24

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January 21, 2011

Via Email (ovov@planning.lacounty.gov) and U.S. Mail

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Re: Comments on RDEIR Proposed Changes to Designation of Sloan Canyon Road in One Valley One Vision Plan

Dear Mr. Glaser:

On behalf of Citizens for Castaic, we provide the following comments on the Revised Draft Environmental Impact Report (RDEIR) prepared to analyze proposed changes to the Santa Clarita Valley One Valley One Vision Plan (OVOV). Specifically, we direct our comments to the proposal to remove the Limited Secondary Highway designation of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road in Castaic. As stated in our letter dated November 23, 2010, Citizens for Castaic strongly opposes this proposal. (Please include our November 23, 2010 letter of opposition as a comment letter on the RDEIR. A copy of this letter is included as Attachment 1.)

1

Citizens for Castaic hereby submits the attached comments on the RDEIR's traffic analysis prepared by traffic expert Tom Brohard and Associates. (Attachment 2, comments by Tom Brohard and Associate; Attachment 3, curriculum vitae for Tom Brohard.) Tom Brohard and Associates have identified numerous potentially significant adverse traffic impacts associated with the removal of the Limited Secondary Highway designation on Sloan Canyon Road. Flaws in the RDEIR's proposal to remove the designation from Sloan Canyon Road include: conflict of the removal with other goals and objectives of the OVOV; lack of adequate emergency/secondary access; lack of adequate traffic analysis to support the removal; and failure to include the traffic that would be generated by the proposed Castaic Area High School.

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A. Greenhouse Gas and Air Quality Impacts from Traffic Gridlock Should Be Analyzed.

Tom Brohard and Associates notes that leaving the Limited Secondary Highway designation of Sloan Canyon Road could reduce the significant traffic gridlock that would otherwise occur at the I-5 interchanges with Sloan Canyon Road and Parker Road along The Old Road. Failing to provide this additional north-south connector for Castaic by removing the designation of Sloan Canyon Road would increase predicted traffic backups. Further, these traffic backups would result in increased greenhouse gases emissions and other vehicular emissions such as carbon monoxide and particulate matter. The RDEIR must analyze the potential increase in greenhouse gas emission as required by CEQA Guidelines section 15064.4, as well as air quality impacts that would result from the removal of an additional north-south connector for Castaic. CEQA requires the County to consider all feasible measures to reduce greenhouse gas emissions. Thus, the County should consider leaving the designation of Sloan Canyon Road in place as a means to reduce greenhouse gas emissions that would otherwise result from increased traffic gridlock.

6

B. The Community Standards District Would Significantly Limit the Width of Sloan Canyon Road if the Designation is Removed.

If the Limited Secondary Highway designation is removed from Sloan Canyon Road, it would be deemed a local street. The Castaic Area Community Standards District limits the width of local streets to a maximum of 28 feet. (Los Angeles County Code section 22.44.137(D)(2)(a).) This is less than half the width that would be allowed for Sloan Canyon Road if the designation were to remain in place. The RDEIR fails to acknowledge this limitation that would be placed on the width of Sloan Canyon Road, and thus fails to adequately analyze the potential land use and traffic impacts associated with the proposed removal of the Limited Secondary Highway designation of Sloan Canyon Road.

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C. The RDEIR Fails to Analyze Impacts to Existing Land Use Approvals.

The approval of Tentative Tract Map 47807 requires the owners of this 77 home tract map located in the Romero Canyon area of Castaic to provide access to the site via Sloan Canyon Road from both north and south in the area between Hillcrest Parkway and Quail Valley Road. Specifically, the County has required that the developers provide access to the site "on Romero Canyon Road via Parker Road [which connects to Sloan Canyon Road] north of the project and on Romero Canyon Road via Sloan Canyon Road and Madloy Street [now known as Hillcrest Parkway] south of the project." (Attachment 4, November 19, 1991 Los Angeles County Department of Regional Planning Project

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3/24

Mitch Glaser
January 21, 2011
Page 3 of 4

Changes/Conditions Due To Environmental Evaluation for Tract No. 47807.) If the Limited Secondary Highway designation is removed from Sloan Canyon Road, the developers may no longer be able to comply with the conditions of approval for Tentative Tract Map 47807. This would result in their inability to move forward with the project because they could not be in substantial compliance with the conditions of approval. The RDEIR fails to analyze this land use conflict.

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Further, the County specified that access to this site should be provided by Sloan Canyon Road as a means of mitigating potentially significant traffic impacts associated with Tract Map 47807. If Tract Map 47807, or any other project located at the same site such as the proposed Castaic Area High School project, were no longer able to comply with this mitigation measure to use Sloan Canyon Road from the south as a primary access route and Sloan Canyon Road from the north as a secondary access route, significant adverse traffic impacts would result. The RDEIR fails to analyze whether the Sloan Canyon Road could still be used to access Tract Map 47807 or the Castaic Area High School if the Limited Secondary Highway designation were removed.

9

Conclusion

In conclusion, Citizens for Castaic reiterates it request that the County maintain the Limited Secondary Highway designation for Sloan Canyon Road. Sloan Canyon Road has been designated as a Limited Secondary Highway for 50 years without any negative impacts on the community, whereas removing this designation could result in adverse impacts to Castaic citizens. Further, the majority of the property owners along Sloan Canyon Road have paid fees into the County's Bridge and Thoroughfare District. If the designation is removed, the fees already paid will no longer be able to be used to fund road construction and rehabilitation projects along Sloan Canyon Road. For all of these reasons, including those indentified in the traffic analysis prepared by Tom Brohard and Associates, we request that you revise the proposed OVOV to include the continued Limited Secondary Highway designation for Sloan Canyon Road.

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Thank you for your time and consideration in this matter.

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Sincerely,



Amy Minter

Mitch Glaser
January 21, 2011
Page 4 of 4

Attachments:

1. Citizens for Castaic November 23, 2010 Comment Letter
2. Analysis of Traffic Impacts by Tom Brohard and Associate
3. Curriculum Vitae for Tom Brohard
4. Conditions of Approval for TTM 47807

cc: Citizens for Castaic
William S. Hart Union High School District Governing Board
Los Angeles County Department of Public Works
Michael D. Antonovich, Los Angeles County Supervisor
Edel Vizcarra, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich
Los Angeles County Planning Commission
Ron Vaughn, Senior Architect, California Division of State Architect
California Department of Education, School Facilities Planning Division

5/24

ATTACHMENT 1

6/24

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November 23, 2010

Via Email and U.S. Mail

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Re: Proposed Changes to Designation of Sloan Canyon Road in One Valley One Vision Plan

Dear Mr. Glaser:

This firm represents Citizens for Castaic, a community group dedicated to the sensible development for the community of Castaic and protection of its equestrian lifestyle. Citizens for Castaic strongly opposes the proposed removal of Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway.

The area around Sloan Canyon Road is prone to wildfires and flooding, necessitating adequate emergency access. The continued designation of Sloan Canyon Road as a Limited Secondary Highway will help provide the required emergency access. The removal of the Limited Secondary Highway designation for Sloan Canyon would also remove Sloan Canyon Road from the Highway Plan and Bridge and Thoroughfare District, limiting the funds that could be used to improve emergency access along this road.

The retention of the Limited Secondary Highway designation is particularly important in light of a recent proposal to construct a new high school at a location to which Sloan Canyon Road could provide access. Sloan Canyon Road should remain designated as a Limited Secondary Highway to ensure there could be a safe route to the proposed school and adequate funding to provide that route in a timely manner.

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7/24

Mitch Glaser
November 23, 2010
Page 2 of 2

Please feel free to contact me if you have any questions. Thank you for your time and consideration in this matter.

12

Sincerely,



Amy Minter

- cc: Citizens for Castaic
- Michael D. Antonovich, Los Angeles County Supervisor
- Pat Modugno, Planning Commissioner
- Paul Novak, Planning Deputy to Supervisor Antonovich
- Rosalind Wayman, Senior Deputy to Supervisor Antonovich
- Castaic Area Town Council
- William S. Hart UHSD Governing Board

8/24

ATTACHMENT 2

9/24

Tom Brohard and Associates

January 19, 2011

Amy Minter
Chatten-Brown & Carstens
2601 Ocean Park Blvd. Suite 205
Santa Monica, CA 90405

SUBJECT: Review of the Revised Draft Program Environmental Impact Report for the Proposed Santa Clarita Valley Area Plan in the County of Los Angeles – Deletion of Sloan Canyon Road in Castaic – Traffic Issues

Dear Ms. Minter:

Tom Brohard, P.E., has reviewed Section 3.2 Transportation and Circulation of the November 2010 Revised Draft Program Environmental Impact Report (Draft EIR) prepared by Impact Sciences, Inc. for the Santa Clarita Valley Area Plan One Valley One Vision in the County of Los Angeles. Other documents including the Circulation Element of the November 2010 Revised Draft Santa Clarita Valley Area Plan One Valley One Vision (OVOV Area Plan) and various traffic studies prepared by Austin-Foust Associates including the June 2010 One Valley One Vision Valley-Wide Traffic Study (OVOV Traffic Study) in Appendix 3.2 to the Draft EIR and the June 1, 2010 Draft Castaic High School Romero Canyon Site Analysis (High School Traffic Study), as well as various other documents available on the County of Los Angeles and the Wm. S. Hart Union High School District websites, have also been reviewed.

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This review focuses on the proposed removal of the limited secondary highway classification of Sloan Canyon Road in the Castaic area. The proposed deletion of certain portions of Sloan Canyon Road is directly contrary to several goals and objectives of the OVOV Area Plan, namely to provide a unified network of roadways which provides safe and efficient movement of people and goods. The proposed deletion will hinder, not enhance, the connectivity of the area's roadway network that has long been envisioned for Castaic. The proposed deletion will not ensure that new development is provided with adequate emergency/secondary access for evacuation and emergency response and does not meet the OVOV Area Plan requirement to provide two access points for every subdivision. Moreover as discussed throughout this letter, the Draft EIR fails to provide a proper traffic analysis for deletion of Sloan Canyon Road from Mandolin Canyon Road to Hillcrest Parkway.

14

In addition to the contradictions with the goals and objectives of the OVOV Area Plan and the failure to analyze the proposed deletion, 7,400 daily trips forecast for Castaic High School have been omitted from the analysis of roadways in the OVOV Draft EIR. This serious flaw understates the number of trips that will use area roadways including Sloan Canyon Road in the future. It is premature for the County of Los Angeles to remove the limited secondary highway designation

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Phone (760) 398-8885 Fax (760) 398-8897
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10/24

Ms. Amy Minter
OVOV Draft Program EIR - Sloan Canyon Road Deletion – Traffic Issues
January 19, 2011

from portions of Sloan Canyon Road until the traffic impacts and roadway needs are evaluated in the Draft Environmental Impact Report now being prepared by The Planning Center for the Wm. S. Hart Union High School District. The Castaic High School Project clearly will have impacts on traffic and circulation including cumulative impacts that are greater than projected by the OVOV Traffic Study and Draft EIR. These impacts must be fully and properly assessed in a revised Draft EIR for the OVOV Area Plan.

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Education and Experience

Since receiving a Bachelor of Science in Engineering from Duke University in Durham, North Carolina in 1969, I have gained over 40 years of professional engineering experience. I am licensed as a Professional Civil Engineer both in California and Hawaii and as a Professional Traffic Engineer in California. I formed Tom Brohard and Associates in 2000 and now serve as the City Traffic Engineer for the City of Indio and as Consulting Transportation Engineer for the Cities of Big Bear Lake, Mission Viejo, and San Fernando. I have extensive experience in traffic engineering and transportation planning. During my career in both the public and private sectors, I have reviewed numerous environmental documents and traffic studies for various projects. Several recent assignments are highlighted in the enclosed resume.

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Sloan Canyon Road Deletion

As shown on Page 81 of the OVOV Area Plan, Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road is recommended to be removed from the Highway Plan as a Limited Secondary Highway. If approved, there would be no north/south Highway Plan roadway west of I-5 that connects development between Quail Valley Road and Hillcrest Parkway other than The Old Road.

At their December 6, 2010 meeting, the County's Interdepartmental Engineering Committee (IEC) discussed the OVOV Area Plan recommendation to delete portions of Sloan Canyon Road. The IEC recommended a modification to the OVOV Area Plan that would retain the Limited Secondary Highway designation for the east/west portions of Sloan Canyon Road and Mandolin Canyon Road but would remove the north/south portion of Sloan Canyon Road from Mandolin Canyon Road to Hillcrest Parkway. If the recommended IEC modification to the Highway Plan is approved, there still would be no north/south Highway Plan roadway west of I-5 connecting development other than The Old Road.

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Traffic Issues

Based on the information provided in the various documents that I have reviewed and what I have learned in discussions with you and your clients, Citizens for Castaic, my review indicates the following traffic issues and areas of concern:

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- 1) Sloan Canyon Road Deletion Contradicts OVOV Area Plan – In identifying circulation needs for the Santa Clarita Valley, Item #2 on Page 111 of the OVOV Area Plan states a high priority to “Increase connectivity between neighborhoods and districts.” To address this need, Objectives and Policies are identified for the Street and Highway System including:

“Goal C-2: Street and Highway System – A unified and well-maintained network of streets and highways which provides safe and efficient movement of people and goods between neighborhoods, districts, and regional centers, while maintain community character.

Objective C-2.1 – Implement the Circulation Plan (as shown on Exhibit C-2) for streets and highways to meet existing and future travel demands for mobility, access, connectivity, and capacity.

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Policy C-2.1.2 – Enhance connectivity of the roadway network to the extent feasible given the constraints of topography, existing development patterns, and environmental resources, by constructing grade separations and bridges; connecting discontinuous streets; extending secondary access into areas where needed; prohibiting gates on public streets; and other improvements as deemed appropriate based on traffic analysis.

Objective C-2.5 – Consider the needs for emergency access in transportation planning.

Policy C-2.5.2 – Ensure that new development is provided with adequate emergency and/or secondary access for purposes of evacuation and emergency response; require two points of ingress and egress for every subdivision or phase thereof, except as otherwise approved for small subdivisions where physical constraints preclude a second access point.”

The proposed deletion of the north/south portion of Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway contradicts Goal C-2 of the OVOV Area Plan to provide a unified network of roadways for the safe and efficient movement of people and goods. The proposed deletion will hinder, not enhance, the connectivity of the area’s roadway network that has long been envisioned for Castaic, contradicting Objective C-2.1 and Policy C-2.1.2. In contrast to Objective C-2.5 and Policy C-2.5.2, the proposed deletion will not ensure that new development is provided with adequate emergency and/or secondary access for purposes of evacuation and emergency response. The proposed deletion also does not meet the OVOV Area Plan requirement to provide two points of ingress and egress for every subdivision.

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As shown on the current Highway Plan and as envisioned for many years, Sloan Canyon Road provides both east/west and north/south connectivity in

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the area west of I-5. With very rugged topography to the northwest, future development opportunities in those areas are extremely limited. To serve the planned development and connect the Highway Plan roadways together at their westerly ends, the north/south portion of Sloan Canyon Road should remain as the Limited Secondary Highway and connect the east/west part of this roadway with Hillcrest Parkway. Under the OVOV Area Plan land uses, both Mandolin Canyon Road and Romero Canyon Road to the northwest should continue to be classified as local residential streets.

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- 2) Traffic Volume Forecasts Not Provided for Sloan Canyon Road Deletion – Page 3.2-32 of the Draft EIR states “Future daily traffic volumes on study arterial roadways were estimated for both current County Area Plan and City General Plan land uses and the proposed OVOV land uses, with incorporation of the proposed Highway Plan, which is illustrated in Figure 3.2-5, OVOV Highway Plan. The proposed Highway Plan includes improvements such as roadway designation changes, widenings, and traffic signal modifications, to roadways located throughout the OVOV Planning Area.” Sloan Canyon Road from west of Quail Valley Road to Hillcrest Parkway is not shown on the proposed Highway Plan in Figure 3.2-5, reflecting the proposed deletion of this part of Sloan Canyon Road from the Highway Plan.

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Page 3.2-34 of the Draft EIR states “Long-range ADT volumes for study arterial roadways under current County Area Plan and City General Plan buildout are shown in Figure 3.2-6, Average Daily Traffic Volumes – Buildout of County Area Plan and Current City General Plan.” This figure as well as Table 3.2-9 on Page 3.2-44 show 2,000 vehicles per day on Sloan Canyon Road just west of Quail Valley Road and 4,000 vehicles per day on Sloan Canyon Road south of Hillcrest Parkway. Figure 3.2-7, Average Daily Traffic Volumes – Buildout of County Area Plan and Proposed City General Plan and Table 3.2-9 indicate 2,000 vehicles per day on Sloan Canyon Road just west of Quail Valley Road and 3,000 vehicles per day on Sloan Canyon Road south of Hillcrest Parkway. These future traffic forecasts for Sloan Canyon Road are significantly lower than they would be with the connection retained.

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While the Draft EIR recommends deletion of Sloan Canyon Road from west of Quail Valley Road to Hillcrest Parkway, forecasts have not been provided to compare traffic volumes under the existing Highway Plan including the Sloan Canyon Road connection against the proposed Highway Plan without this portion of Sloan Canyon Road. Appendix 3.2 of the Draft EIR, the OVOV Traffic Study on which the Draft EIR is based, also does not provide daily traffic forecasts with and without Sloan Canyon Road from Quail Valley Road to Hillcrest Parkway. Instead, Page 3-12 of the OVOV Traffic Study merely lists the roadway segments recommended to be removed from the Highway Plan “as a result of the traffic analysis.” The Draft EIR and the OVOV Traffic Study do not provide any traffic analysis for the proposed deletion of the

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north-south portion of Sloan Canyon Road or for the IEC recommendation to add Mandolin Canyon Road to the west as a Limited Secondary Highway.

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- 3) Sloan Canyon Road Provides Alternate North-South Connection – Appendix C to the OVOV Traffic Study provides future land uses and their associated trips for 455 traffic analysis zones in the entire OVOV Planning Area. Zones west of I-5 that could use a north-south Highway Plan connection between Mandolin Canyon Road and Hillcrest Parkway include Traffic Analysis Zones 1, 2, 13, 14, 15, 16, 17, 18, and 19. From the OVOV Buildout Land Use and Trip Generation by TAZ Table in Appendix C, the OVOV land uses in these nine traffic analysis zones are forecast to generate 60,524 daily trips.

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Without the north-south portion of Sloan Canyon Road, trips oriented north-south in the nine zones will be required to use The Old Road or I-5. Without widening of I-5, Table 3.2-13 on Page 3.2-60 of the Draft EIR indicates I-5 Northbound will operate at Level of Service F and I-5 Southbound will operate at Level of Service E in the PM peak hour with buildout of the OVOV Area Plan. Sloan Canyon Road provides an alternate route for localized north-south circulation to the west of I-5, and could potentially reduce the significant traffic impacts that are otherwise forecast to occur.

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Without a connection to the north, a significant portion of the over 2,800 daily trips to and from the middle school on Hillcrest Parkway in Zone 19 must travel east to The Old Road before going north or west to and from their homes. When I-5 is closed up to 10 times a year north of Sloan Canyon Road with snow and/or ice or during brush fires, all I-5 traffic is turned around and rerouted from the northbound to the southbound freeway lanes, resulting in gridlocked conditions at the I-5 Interchanges with Sloan Canyon Road and Parker Road and along The Old Road. Deletion of Sloan Canyon Road takes away the only alternative route that would otherwise be available for north-south circulation to the west of I-5 during these times.

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- 4) Sloan Canyon Road Is Required to Meet North-South Travel Demand – Sloan Canyon Road has been planned as a limited secondary highway on the County's Highway Plan for many years. As part of the planning process, it is my understanding that all necessary easements and dedications already exist for the extension of Sloan Canyon Road as a Limited Secondary Highway between Mandolin Canyon Road and Hillcrest Parkway. Further, it is my understanding that Bridge and Thoroughfare Fees have been collected for its construction. The only other alternative north-south route, Romero Canyon Road, has not been planned as part of the County's Highway Plan. Additional right-of-way would be necessary to provide the width and convert Romero Canyon Road to a Limited Secondary Highway. Furthermore, Romero Canyon Road is a local residential street designed for full access to about 150

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adjacent single family homes whereas there are about six residential properties along Sloan Canyon Road.

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With Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway currently designated as a two-lane Limited Secondary Highway, this planned facility can accommodate up to 18,000 vehicles per day. With deletion of this portion of Sloan Canyon Road, the ability to serve north-south travel demand would be limited to 2,500 vehicles per day for a local residential street. With buildout of the OVOV development in the area generating over 60,000 daily trips as indicated above, the demand for north-south trips in the area of Sloan Canyon Road would exceed the 2,500 vehicles per day threshold capacity for a local residential street.

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- 5) Proposed High School Will Further Increase North-South Traffic Volumes – According to Table 1-1 on Page 1-4 of the High School Traffic Study, a total of 2,600 students are expected to attend Castaic High School at buildout and this enrollment would be expected to generate 7,400 daily trips to and from the site. From the Wm. S. Hart Union High School District website, the new high school attendance area will extend north and west to the Los Angeles County boundaries as well as east of I-5 and south of SR-126.

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According to Figure 1-3 of the High School Traffic Study, nearly 75 percent of the trips to and from the proposed high school will begin or end in the area to the southeast of the high school site. A significant number of these trips, on the order of 3,000 vehicles per day, would be likely to use the planned extension of Sloan Canyon Road. These additional trips have not been considered or included within the OVOV traffic forecasts for Sloan Canyon Road. High school trips alone would exceed the threshold capacity of 2,500 vehicles per day for a local residential street.

- 6) Romero Canyon High School Site Requires Two Access Points – The November 19, 1991 Los Angeles County Department of Regional Planning Project Changes/Conditions Due To Environmental Evaluation for Tract No. 47807 required access to and from the south and north/east for the 77 single family homes. Specifically, the County has required access to the site to be provided “on Romero Canyon Road via Parker Road north of the project and on Romero Canyon Road via Sloan Canyon Road and Madloy Street [now known as Hillcrest Parkway] south of the project.” If the Wm. S. Hart Union High School District purchases this property for development of Castaic High School, the prior conditions of approval for two points of access for Tract No. 47807 would still apply to the high school. Further, the high school would generate ten times more daily traffic than the 77 single family homes (7,400 vehicles per day with the high school compared to about 740 vehicles per day for 77 homes), creating an even greater need for two accesses to the north/east and south of the site.

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If access only to the north/east is provided for the proposed high school, the High School Traffic Study indicates a significant traffic impact would occur at The Old Road and Parker Road. This significant impact could not be mitigated even with widening Parker Road west of The Old Road as the intersection would still operate at Level of Service "E" in the AM peak hour. In addition, Sloan Canyon Road west of Quail Valley Road would require four traffic lanes (Secondary Highway) rather than two traffic lanes (Limited Secondary Highway) that have been recommended as part of the OVOV Area Plan.

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As with the OVOV Traffic Study, the High School Traffic Study has not fully evaluated a second access to and from the south for the high school site. In my professional opinion, Sloan Canyon Road as originally planned and included in the current Highway Plan would disperse high school traffic. With the connection of Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway, significant and unmitigated traffic impacts at The Old Road and Parker Road may not occur and the widening of Sloan Canyon Road to four lanes west of Quail Valley Road will probably not be needed. Both the OVOV Traffic Study as well as the High School Traffic Study must conduct further traffic analysis of the southerly second access for circulation and emergency access for the high school site based on buildout conditions.

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- 7) Deletion of Sloan Canyon Road Is Premature – The County’s Highway Plan is amended from time to time based on land use changes. While the OVOV Area Plan is based on updated and revised land uses, trips to and from Castaic High School are not included within the OVOV Traffic Study. If the Wm. S. Hart Union High School District proceeds with a high school at the location of Tract No. 47807 or at any of the other high school sites previously considered, the north/south part of Sloan Canyon Road provides necessary access to the high school as well as an important connection for area circulation. Clearly, it is premature for Los Angeles County to delete Sloan Canyon Road from Mandolin Canyon Road to Hillcrest Parkway at this time, only to add this critical facility back into the Highway Plan within the next year in response to traffic needs associated with the new high school.

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In sum, the proposed deletion of Sloan Canyon Road from Mandolin Canyon Road to Hillcrest Parkway is directly contrary to several goals and objectives of the OVOV Area Plan, namely to provide a unified network of roadways which provides safe and efficient movement of people and goods. The proposed deletion will hinder, not enhance, the connectivity of the area’s roadway network that has long been envisioned for Castaic. The proposed deletion does not provide adequate emergency/secondary access for purposes of evacuation and emergency response and does not meet the OVOV Area Plan requirement to provide two access points for every subdivision.

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The Draft EIR fails to provide a proper traffic analysis for deletion of Sloan Canyon Road from Mandolin Canyon Road to Hillcrest Parkway. The concerns raised throughout this letter regarding this issue must be fully assessed using reasonable assumptions in a revised environmental impact report. If you have questions regarding these comments, please call me at your convenience.

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Respectfully submitted,

Tom Brohard and Associates

Tom Brohard

Tom Brohard, PE
Principal



Enclosure

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ATTACHMENT 3

Tom Brohard, PE

- Licenses:** 1975 / Professional Engineer / California – Civil, No. 24577
 1977 / Professional Engineer / California – Traffic, No. 724
 2006 / Professional Engineer / Hawaii – Civil, No. 12321
- Education:** 1969 / BSE / Civil Engineering / Duke University
- Experience:** 40 Years
- Memberships:** 1977 / Institute of Transportation Engineers – Fellow, Life
 1978 / Orange County Traffic Engineers Council - Chair 1982-1983
 1981 / American Public Works Association - Member

Tom is a recognized expert in the field of traffic engineering and transportation planning. His background also includes responsibility for leading and managing the delivery of various contract services to numerous cities in Southern California.

Tom has extensive experience in providing transportation planning and traffic engineering services to public agencies. Since May 2005, he has served as Consulting City Traffic Engineer three days a week to the City of Indio. He also currently provides “on call” Traffic and Transportation Engineer services to the Cities of Big Bear Lake and San Fernando. In addition to conducting traffic engineering investigations for Los Angeles County from 1972 to 1978, he has previously served as City Traffic Engineer in the following communities:

- o Bellflower..... 1997 - 1998
- o Bell Gardens..... 1982 - 1995
- o Huntington Beach..... 1998 - 2004
- o Lawndale..... 1973 - 1978
- o Los Alamitos..... 1981 - 1982
- o Oceanside..... 1981 - 1982
- o Paramount..... 1982 - 1988
- o Rancho Palos Verdes..... 1973 - 1978
- o Rolling Hills..... 1973 - 1978, 1985 - 1993
- o Rolling Hills Estates..... 1973 - 1978, 1984 - 1991
- o San Marcos..... 1981
- o Santa Ana..... 1978 - 1981
- o Westlake Village..... 1983 - 1994

During these assignments, Tom has supervised City staff and directed other consultants including traffic engineers and transportation planners, traffic signal and street lighting personnel, and signing, striping, and marking crews. He has secured over \$5 million in grant funding for various improvements. He has managed and directed many traffic and transportation studies and projects. While serving these communities, he has personally conducted investigations of hundreds of citizen requests for various traffic control devices. Tom has also successfully presented numerous engineering reports at City Council, Planning Commission, and Traffic Commission meetings in these and other municipalities.

Tom Brohard and Associates

Tom Brohard, PE, Page 2

In his service to the City of Indio since May 2005, Tom has accomplished the following:

- ❖ Oversaw preparation and adoption of the Circulation Element Update of the General Plan including development of Year 2035 buildout traffic volumes, revised and simplified arterial roadway cross sections, and reduction in acceptable Level of Service criteria under certain constraints
- ❖ Oversaw preparation of fact sheets/design exceptions to reduce shoulder widths on Jackson Street over I-10 as well as justifications for protected-permissive left turn phasing at I-10 on-ramps, the first such installation in Caltrans District 8 in Riverside County; oversaw preparation of plans and provided assistance during construction of a \$1.5 million project to install traffic signals and widen three of four ramps at the I-10/Jackson Street Interchange under a Caltrans encroachment permit issued under the Streamlined Permit Process
- ❖ Oversaw preparation of fact sheets/design exceptions to reduce shoulder widths on Monroe Street over I-10 as well as striping plans to install left turn lanes on Monroe Street at the I-10 Interchange under a Caltrans encroachment permit
- ❖ Oversaw preparation of traffic impact analyses for Project Study Reports evaluating different alternatives for buildout improvement of the I-10/Monroe Street and the I-10/Golf Center Parkway Interchanges
- ❖ Oversaw preparation of plans, specifications, and contract documents and provided assistance during construction of 22 new traffic signal installations
- ❖ Oversaw preparation of plans and provided assistance during construction for the conversion of two traffic signals from fully protected left turn phasing to protected-permissive left turn phasing with flashing yellow arrows
- ❖ Reviewed and approved over 450 work area traffic control plans as well as signing and striping plans for all City and developer funded roadway improvement projects
- ❖ Oversaw preparation of a City wide traffic safety study of conditions at all schools
- ❖ Prepared over 350 work orders directing City forces to install, modify, and/or remove traffic signs, pavement and curb markings, and roadway striping
- ❖ Oversaw preparation of engineering and traffic surveys to establish enforceable speed limits on over 125 street segments
- ❖ Reviewed and approved traffic impact studies prepared for more than 16 major development projects

Since forming Tom Brohard and Associates in 2000, Tom has reviewed many traffic impact reports and environmental documents for various development projects. He has provided expert witness services and also prepared traffic studies for public agencies and private sector clients.

Tom Brohard and Associates

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ATTACHMENT 4

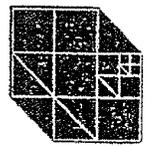
21/24

Los Angeles County
DEPARTMENT OF
REGIONAL PLANNING
320 West Temple Street
Los Angeles
California 90012
974-6411

James E. Hart, AICP
Planning Director

November 19, 1991

Sikand Engineering Association
15230 Burbank Blvd.
Van Nuys, CA 91411
Attn: Matt Beneviste



PROJECT CHANGES/CONDITIONS
DUE TO ENVIRONMENTAL EVALUATION

Project 89213/TR 47807

The Department of Regional Planning staff has determined that the following conditions or changes in the project are necessary in order to assure that there will be no substantial evidence that the proposed project may have a significant effect on the environment:

Prior to alteration of any streambeds, and as a means of mitigating potential environmental impacts, the applicant shall enter into an agreement with the California State Department of Fish and Game, pursuant to Sections 1601 through 1603 of the State Fish and Game Code.

As a means of mitigating potential environmental impacts, the applicant shall agree to suspend construction in the vicinity of a cultural resource encountered during subsurface development of the site, and leave the resource in place until a qualified archaeologist can examine them and determine appropriate mitigation measures. The applicant shall agree to comply with mitigation measures recommended by the archaeologist and approved by the Department of Regional Planning.

Before any discharge of dredged or fill material into waters of the United States or if the project may effect an endangered species, the applicant may be required to apply for a Department of Army Permit pursuant to Section 404 of the Clean Water Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act to the United States Army Corps. of Engineers Los Angeles District Branch.

The applicant shall comply with all requirements of the County Code and the Subdivision Committee which mitigate potential impacts due to hydrological characteristics of the project site as identified in the Initial Study. This shall be ensured and monitored through the filing of the appropriate development permits with the Department of Public Works.

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The applicant shall comply with all requirements of the County Code and the Subdivision Committee which mitigate potential impacts due to geotechnical characteristics of the project site as identified in the Initial Study. This shall be ensured and monitored through the filing of the appropriate development permits with the Department of Public Works.

Per the County Fire Department letter of July 12, 1990 regarding the Oak Tree Permit, the following is required:

1. All oak trees to be retained must be fenced at dripline plus five (5) feet prior to and during construction with chin link fencing of not less than four (4) feet in height. Fencing must be approved by a County Forester before grading is to begin.
2. All trenching within the dripline or ten (10) feet of the trunk, whichever is greater, of any oak tree to be retained shall be accomplished with the use of hand tools or small hand powered equipment.
3. All roots to be cut shall be properly pruned and sealed under the supervision of a tree expert acceptable to the Director of Regional Planning.
4. No planting or irrigation system shall be installed within the dripline of any established oak tree that will be retained.
5. The parking, storage or use of equipment shall be limited to that area outside the dripline of each oak tree. No temporary structure shall be placed within the dripline of any oak tree.
6. All replacement trees shall be planted on fill or native undisturbed soil. Planting of heavily compacted fill shall be accompanied by auguring a minimum of five (5) feet into the fill and extracting the soil. The soil will be amended with enriched soil conditioners and used to plant the replacement trees.
7. All oak trees to be removed shall be replaced at the ration of two (2) 15-gallon or larger, specimen in size, one inch or more in diameter one (1) foot above the base, with trees of the oak genus for each tree removed.
8. Replacement trees shall be properly maintained for a period of two (2) years and replaced by the permittee if mortality occurs within that period. These trees should receive regular watering throughout the replacement period. This can be accomplished by manual means or by the installation of an appropriate (drip or low-flow) irrigation system. All watering should be done so as to wet the entire root zone.

To mitigate traffic impacts, the applicant shall follow the February 12, 1990 recommendations of Public Works Namely:

Access to the project would be on Romero Canyon Road via Parker Road north of the project and on Romero Canyon Road via Sloan Canyon Road and Madloy Street south of the project. Each of these routes would require construction of off-site roadways. The majority of the project's trips would be oriented to the I-5 Freeway interchanges at Lake Hughes Road and Parker Road. In the event that the Romero Canyon Road/Parker Road connection is not constructed, the study also analyzes single access alternative to the south of the project utilizing the Sloan Canyon Road and Madloy Street route.

We agree with the report that additional roadway improvements will not be required if both the north and south access routes are opened with this project. However, if the project is constructed with only the single southerly access, the traffic study is based on the following roadway improvements being in place with this project and other related projects.

At the Backer Road/I-5 southbound ramps, provide an eastbound right-turn lane, and a second westbound through lane.

At the Old Road/Backer Road intersection, provide a northbound left-turn lane and a second through lane, provide southbound dual left-turn lanes, and provide a westbound left-turn lane and a second through lane.

We agree with the single access study that with these additional roadway improvements, the circulation system would adequately handle the traffic generated by this project and other nearby related projects. We, therefore, recommend that this project be approved provided that no building permits be issued until these improvements are constructed.

We also recommend the following mitigation measures be made a condition of approval of this project for both access alternatives.

Enter into a secured agreement with this department to pay for pro rata shares of the cost to install traffic signals when needed at the following intersections. The developer should determine his proportionate share and submit this information to this Department for review and approval. Traffic signals should only be installed when the actual volumes warrant the signals.

Letter No. D79

Letter from Chatten-Brown & Carstens, January 21, 2011

Response 1

This commenter provides an introduction to the comments that follow. No further response is required.

Response 2

The commenter provides an introduction to the comments that follow. No further response is required.

Response 3

The commenter states that the Revised Draft EIR's proposal to remove the Limited Secondary Highway designation from a portion of Sloan Canyon Road conflicts with the proposed Area Plan's goals and objectives.

For clarification purposes, the Revised Draft EIR does not propose to remove the Limited Secondary Highway designation from a portion of Sloan Canyon Road; the Circulation Element of the proposed Area Plan proposes to remove said designation. The commenter provides no specifics as to the conflicts with the proposed Area Plan's goals and objectives; therefore, no further response can be provided.

Response 4

The commenter states that the Revised Draft EIR's proposal to remove the Limited Secondary Highway designation from a portion of Sloan Canyon Road would result in a lack of emergency/secondary access and that there is a lack of adequate traffic analysis to support the removal.

For clarification purposes, the Revised Draft EIR does not propose to remove the Limited Secondary Highway designation from a portion of Sloan Canyon Road; the Circulation Element of the proposed Area Plan proposes to remove said designation.

The comment regarding a lack of emergency/secondary access only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see

Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to “residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*” (emphasis added). These standards specify that “(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*” (emphasis added) and that “(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*” (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency/secondary access and safe pedestrian access, and also provide for review and approval by the County’s Department of Public Works and the County’s Fire Department.

The comment regarding a lack of adequate traffic analysis to support the removal only expresses the opinion of the commenter. A traffic study was prepared for the County’s proposed Area Plan and the City of Santa Clarita’s (City) proposed General Plan, both of which were developed through the joint “One Valley One Vision” (OVOV) planning effort (see Revised Draft EIR Appendix 3.2, One Valley One Vision Valley-Wide Traffic Study). The traffic study evaluated buildout of the land uses proposed under the County’s proposed Area Plan and the City’s proposed General Plan as well as buildout of the Highway Plans proposed under the County’s proposed Area Plan and the City’s proposed General Plan. The traffic study evaluated traffic and roadway impacts at a programmatic level, which is appropriate for a programmatic level EIR for a proposed Area Plan, and the traffic study addressed the impacts of the removal of the Limited Secondary Highway designation with respect to the movement of vehicles throughout the Santa Clarita Valley.

Response 5

The commenter states that the Revised Draft EIR’s proposal to remove the Limited Secondary Highway designation from a portion of Sloan Canyon Road failed to include the traffic that would be generated by the proposed Castaic Area High School.

For clarification purposes, the Revised Draft EIR does not propose to remove the Limited Secondary Highway designation from a portion of Sloan Canyon Road; the Circulation Element of the proposed Area Plan proposes to remove said designation. At the time the Notice of Preparation for this EIR was issued on July 28, 2008, the location of the proposed Castaic Area High School had not been determined. The OVOV Valley-Wide Traffic Study (Appendix 3.2 of the Revised Draft EIR) analyzed all of the existing, proposed, and expected traffic in the unincorporated Santa Clarita Valley as of July 28, 2008, pursuant to *State CEQA Guidelines* Section 15125(a). Furthermore, an independent and site specific EIR is presently underway for the proposed Castaic Area High School. Site-specific traffic impacts associated with the proposed high school will be addressed in that project EIR.

Response 6

The commenter suggests that retaining the Limited Secondary Highway designation could reduce the significant traffic gridlock that would otherwise occur at the I-5 interchanges with Sloan Canyon Road and Parker Road along The Old Road, and that failing to provide this additional north-south connector for Castaic would increase predicted traffic backups. The commenter states that these traffic backups would result in increased greenhouse gas emissions and other vehicular emissions. The commenter then states that the Revised Draft EIR must analyze the potential increase in greenhouse gas emissions, as required by the *State CEQA Guidelines*, Section 15064.4, as well as air quality impacts, and that the County should consider leaving the Limited Secondary Highway designation in place as a feasible mitigation measure to reduce greenhouse gas emissions that would otherwise result from increased traffic gridlock.

The comments suggesting the retaining the Limited Secondary Highway designation could reduce significant traffic gridlock that would otherwise occur, and that failing to provide this additional north-south connector would increase predicted traffic backups, only express the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." Accordingly, if Sloan Canyon Road were to be considered a local street, it would continue to accommodate north-south access within the Castaic community.

The comments regarding greenhouse gas emissions and air quality impacts address general subject areas, which received extensive analysis in the Revised Draft EIR. The commenter is directed to Revised Draft EIR Section 3.3, Air Quality, and Revised Draft EIR Section 3.4, Global Climate Change. Both of these sections of the Revised Draft EIR were based on the OVOV Valley-Wide Traffic Study (Appendix 3.2 of the Revised Draft EIR), which analyzed, on a valley-wide programmatic level, the impacts of the proposed Area Plan's Circulation Element and Highway Plan, which removed the Limited Secondary Highway designation from a portion of Sloan Canyon Road. All global climate change and air quality impacts were evaluated for the proposed Area Plan as a whole. The Revised Draft EIR concluded that significant and unavoidable air quality and global climate change impacts would occur with implementation of the proposed Area Plan. Retaining the Limited Secondary Highway designation

would not significantly reduce either the air quality or global climate change impacts that would occur with implementation of the proposed Area Plan. The commenter provides no specifics as to how a local street designation results in greater air quality or global climate change impacts than a Limited Secondary Highway designation; therefore, no further response can be provided.

Response 7

The commenter states that if the Limited Secondary Highway designation is removed from Sloan Canyon Road, the roadway would be considered a local street, and that the Castaic Area Community Standards District (CSD) limits the width of local streets to a maximum of 28 feet. The commenter states that this width is less than half the width that would be allowed for Sloan Canyon Road if the Limited Secondary Highway designation were to remain in place, that the Revised Draft EIR fails to acknowledge this limitation, and that the Revised Draft EIR thus fails to adequately analyze the potential land use and traffic impacts associated with the proposed removal of the Limited Secondary Highway designation.

The commenter correctly states that if the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The commenter also correctly states that the Castaic Area CSD, adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets that limit the width of pavement (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...as approved by the county department of public works and the county fire department."

Please see **Response 4**, above, with regard to the traffic analysis in the Revised Draft EIR, traffic impacts, and the removal of the Limited Secondary Highway designation from Sloan Canyon Road. The Revised Draft EIR addressed land use issues at a programmatic level, as described in Revised Draft EIR Section 3.1, Land Use. The Revised Draft EIR did not determine significant impacts to land use. The comment does not raise any specific issue regarding that analysis and, therefore, no more specific response can be provided or is required. Furthermore, the commenter provides no specifics as to how a local street results in greater land use and traffic impacts than a Limited Secondary Highway designation. The proposed Area Plan's Circulation Element describes Limited Secondary Highways, in part, as follows: "arterials with more limited mobility and greater access, with an ultimate roadway design section of two travel lanes and with partial control of vehicular and pedestrian access to the roadway from driveways, cross

streets, and crosswalks.” Accordingly, Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. The CSD was established “to protect the rural character, unique appearance, and natural resources of the Castaic Area communities” and also ensure “that new development will be compatible with the Castaic area’s existing rural neighborhoods and with the goals of the Santa Clarita Valley Area Plan” (see Section 22.44.137.A of the County Zoning Ordinance). Although the CSD standards may limit the width of pavement, a paved width of 28 feet accommodates two travel lanes, and as noted in **Response 4**, above, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency/secondary access and safe pedestrian access, and also provide for review and approval by the County’s Department of Public Works and the County’s Fire Department.

Response 8

The commenter states that conditions of approval for a previously approved project *may* not be able to be satisfied with the removal of the Limited Secondary Highway Designation from Sloan Canyon Road and that the Revised Draft EIR fails to analyze this land use conflict.

The commenter does not provide specifics as to how the designation of Sloan Canyon Road will prevent the project developer from complying with the conditions of approval.

Please also see **Response 4** and **Response 7**, above, which discuss that the Revised Draft EIR is a programmatic document which would not address project specific issues. Section 1.0, Introduction of the Revised Draft EIR discusses the level of detail necessary for a Program EIR as follows:

“This EIR can be classified as a ‘program EIR.’ A program EIR may be prepared on a series of actions that can be characterized as one large project and are related either geographically; as logical parts in the chain of contemplated actions; in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways. The program EIR enables an agency to examine the overall effects of the proposed course of action and to take steps to avoid unnecessary adverse environmental effects. According to Section 15168 of the *State CEQA Guidelines*, the program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

This program EIR evaluates the broad-scale impacts of the County’s proposed Area Plan. The Area Plan will be a component of the County’s General Plan. The Area Plan EIR, addressing the potential impacts of the County’s goals, objectives, and policies for the unincorporated portions of the Valley can be thought of as a “first tier” document. It

evaluates the large-scale impacts on the environment that can be expected to result from the adoption of the Area Plan, but does not necessarily address the site-specific impacts that each of the individual development projects that will follow and be implemented the Area Plan may have. CEQA requires each of those subsequent development projects to be evaluated for their particular site-specific impacts. These site-specific analyses are typically encompassed in second-tier documents, such as project EIRs, focused EIRs, and mitigated negative declarations on individual development projects subject to the Area Plan, which typically evaluate the impacts of a single activity undertaken to implement the overall plan. The program EIR can be incorporated by reference into subsequent documents to focus on new or site-specific impacts.”

(Revised Draft EIR page 1.0-7)

Response 9

The commenter states that the Revised Draft EIR fails to analyze whether Sloan Canyon Road could be used to access Tract Map 47807 or the Castaic Area High school if the Limited Secondary Highway designation were removed.

Please see **Response 5**, and **Response 8**, above.

Response 10

The commenter states that removing the Limited Secondary Highway designation from Sloan Canyon Road would result in adverse impacts to Castaic citizens and that the designation should remain.

The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the majority of the property owners along Sloan Canyon Road have paid fees into the County’s Bridge and Thoroughfare (B&T) District and that if the Limited Secondary Highway designation is removed, the fees already paid will no longer be able to be used to fund road construction and rehabilitation projects along Sloan Canyon Road.

The commenter correctly states that, if the Limited Secondary Highway designation is removed, this would eliminate the ability of the Castaic B&T District to fund construction of the roadway. However, the decision to designate a roadway as a Highway cannot and should not be based upon the desire to provide funding. In addition, although Sloan Canyon Road is currently designated as a Highway, it is important to note that during the formation of the Castaic B&T District, and during subsequent updates to the Castaic B&T District, Sloan Canyon Road was not included. Therefore, the commenter is incorrect

in that B&T funding was never envisioned for Sloan Canyon Road, regardless of whether it was designated as a Highway.

Responses to the traffic analysis comments prepared by Tom Brohard are discussed in **Responses 13 to 38**, below.

Response 11

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

Attachment 1

Response 12

The commenter states that Citizens for Castaic, a community group, opposes the proposed removal of the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway, as the route would help provide emergency access. The commenter also states that removal of this designation will remove Sloan Canyon Road from the Master Plan of Highways and Bridge and Thoroughfare (B&T) District, limiting funds that could be used to improve emergency access along this road. Lastly, the commenter states that the retention of this designation could provide a safe route to a proposed high school in the area.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding emergency access and safe routes to school only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are

prohibited *unless otherwise deemed necessary for public safety purposes*” (emphasis added) and that “(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*” (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County’s Department of Public Works and the County’s Fire Department. Also, please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 10**, above, regarding the B&T District.

Attachment 2

Response 13

The commenter provides an introduction to the comments that follow. No further response is required.

Response 14

The commenter states that the removal of the Limited Secondary Highway designation from Sloan Canyon Road is in conflict with the proposed Area Plan’s goals and objectives, namely to provide a unified network of roadways which provides safe and efficient movement of people and goods. The commenter further states that the deletion of the designation will not ensure that new development is provided with adequate emergency/secondary access and does not meet the proposed Area Plan’s requirement to provide two access points for every subdivision. Lastly, the commenter states that the Revised Draft EIR fails to provide a proper traffic analysis for the removal of the Limited Secondary Highway designation from Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway.

First, the comment that removal of the Limited Secondary Highway designation is in conflict with the proposed Area Plan’s goals and objectives only expresses the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Nonetheless, the following information is provided. The County does not concur that the removal of the Limited Secondary Highway designation is in conflict with the proposed Area Plan’s goals and objectives. The Circulation Element of the proposed Area Plan states, in part, “Roadway systems are designed with different types of streets to balance mobility and access needs in an efficient manner. The different functions of various roadways require specific methods of analysis and design, because each street type must meet different traffic capacity and access requirements. While it might be considered desirable to provide both access and mobility on all roadways, most residents would not like their local neighborhood streets to be designed to carry large volumes of through traffic. Conversely, congestion problems occur when a street designed to provide mobility is expected to provide for access as well. Local streets typically require numerous driveways to move vehicles off the street and

onto adjacent properties. When too many access points are provided on a street intended for mobility, friction and conflicts occur between those vehicles needing access and other vehicles using the facility for mobility. Therefore, the designation of streets for different uses has both a functional and economic value, and must be considered in developing a viable circulation plan.” Accordingly, the Circulation Element of the proposed Area Plan acknowledges that designation of streets for different uses is necessary to implement the proposed Area Plan’s goals and objectives, including those to provide a unified network of roadways which provides safe and efficient movement of people and goods.

Second, the comment that removal of the Limited Secondary Highway designation will not ensure that new development is provided with adequate emergency/secondary access and does not meet the proposed Area Plan’s requirement to provide two access points for every subdivision only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. Nonetheless, please see **Response 4** and **Response 12**, above, regarding adequate emergency/secondary access. The commenter does not provide specifics as to how the designation of Sloan Canyon Road will prevent subsequent subdivision projects from providing two access points, and the commenter is directed to **Response 8**, above, regarding the programmatic nature of the Revised Draft EIR.

Third, the comment that the Revised Draft EIR fails to provide a proper traffic analysis for the removal of the Limited Secondary Highway designation from Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway only expresses the opinion of the commenter. Please see **Response 4**, above, regarding the traffic analysis, and **Response 8**, above, regarding project specific traffic analysis.

Response 15

The commenter states that the Revised Draft EIR fails to analyze the traffic trips associated with the proposed Castaic Area High School. Please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis.

Response 16

The commenter states that it is premature to remove the Limited Secondary Highway designation from portions of Sloan Canyon Road until the EIR for the proposed Castaic High School has been completed.

Please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis.

Response 17

The commenter provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 18

The commenter states that the proposed Area Plan would remove the Limited Secondary Highway designation from Sloan Canyon Road between Hillcrest Parkway and Sloan Canyon Road, and that if the proposed Area Plan were approved, there would be no north-south Highway Plan roadway west of Interstate 5 except for The Old Road. The commenter states that the County's Interdepartmental Engineering Committee (IEC) discussed the proposed Area Plan at its meeting on December 6, 2010, and that the IEC recommended a modification to the proposed Area Plan that would retain the Limited Secondary Highway designation for the east-west portion of Sloan Canyon Road but would remove the Limited Secondary Highway designation for the north-south portion of Sloan Canyon Road. The commenter then states that, if the modification recommended by the IEC were approved, there would still be no north-south Highway Plan roadway west of Interstate 5 except for The Old Road.

The commenter provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 19

The commenter provides an introduction to the comments that follow. No further response is required.

Response 20

The commenter lists several goals, objectives, and policies in the proposed Area Plan that the commenter states are to address the need to "increase connectivity between neighborhoods and districts."

The comment restates information contained in the proposed Area Plan and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 21

The commenter states that the deletion of the north/south portion of Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway contradicts Goal C-2 of the proposed Area Plan, as it will hinder, not enhance, the connectivity of the area's roadway network, contradicting Objective C-2.1 and Policy C-2.1.2 of the proposed Area Plan. The commenter also states that, in contrast to Objective C-2.5 and Policy C-2.5.2 of the proposed Area Plan, the proposed deletion will not ensure that new development is provided with adequate emergency and/or secondary access and that the proposed deletion does not meet the proposed Area Plan's requirement to provide two points of ingress and egress for every subdivision.

The comment is oriented towards the proposed Area Plan, not the Revised Draft EIR, and only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

Nonetheless, the following information is provided. The County does not concur that the removal of the Limited Secondary Highway designation is in conflict with the proposed Area Plan's goals, objectives, and policies. Goal C-2 of the proposed Area Plan states: "A unified and well-maintained network of streets and highways which provides safe and efficient movement of people and goods between neighborhoods, districts, and regional centers, while maintaining community character." Goal C-2 does not state that the entirety of Sloan Canyon Road must be designated as a Limited Secondary Highway. Objective C-2.1 of the proposed Area Plan states: "Implement the Circulation Plan (as shown on Exhibit C-2) for streets and highways to meet existing and future travel demands for mobility, access, connectivity, and capacity." Objective C-2.1 does not state that the entirety of Sloan Canyon Road must be designated as a Limited Secondary Highway. Policy C-2.1.2 of the proposed Area Plan states: "Enhance connectivity of the roadway network to the extent feasible given the constraints of topography, existing development patterns, and environmental resources, by constructing grade separations and bridges; connecting discontinuous streets; extending secondary access into areas where needed; prohibiting gates on public streets; and other improvements as deemed appropriate based on traffic analysis." Policy C-2.1.2 does not state that the entirety of Sloan Canyon Road must be designated as a Limited Secondary Highway. Objective C-2.5 of the proposed Area Plan states: "Consider the needs for emergency access in transportation planning." Objective C-2.5 does not state that the entirety of Sloan Canyon Road must be designated as a Limited Secondary Highway. Policy C-2.5.2 of the proposed Area Plan states: "Ensure that new development is provided with adequate emergency and/or secondary access for purposes of evacuation and emergency response; require two points of ingress and egress for every subdivision or phase thereof, except as otherwise approved for small subdivisions where physical constraints preclude a

second access point.” Policy C-2.5.2 does not state that the entirety of Sloan Canyon Road must be designated as a Limited Secondary Highway. The commenter is directed to **Response 14**, above, regarding how the Circulation Element of the proposed Area Plan acknowledges that designation of streets for different uses is necessary to implement the proposed Area Plan’s goals and objectives, including those to provide a unified network of roadways which provides safe and efficient movement of people and goods. The commenter is also directed to **Response 4** and **Response 12**, above, regarding adequate emergency/secondary access. The commenter does not provide specifics as to how the designation of Sloan Canyon Road will prevent subsequent subdivision projects from providing two access points, and the commenter is directed to **Response 8**, above, regarding the programmatic nature of the Revised Draft EIR.

Response 22

The commenter states Sloan Canyon Road provides both east-west and north-south connectivity in the area west of Interstate 5, and that future development opportunities to the northwest are limited due to very rugged topography. The commenter states that the north-south portion of Sloan Canyon Road should remain as a Limited Secondary Highway to serve the planned development and connect the Highway Plan roadways at their westerly ends. The commenter states that Mandolin Canyon Road and Romero Canyon Road to the northwest should continue to be classified as local streets.

The comment only expresses the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. The County and City, through the joint OVOV planning effort, considered future development potential and topography in developing recommendations for circulation and land use changes in the County’s proposed Area Plan and the City’s proposed General Plan, and the Revised Draft EIR evaluated these recommendations within the unincorporated Santa Clarita Valley (see **Response 4**, above). The Highway Plan (Figure 3.2-5 in the Revised Draft EIR) does not depict local streets, so a roadway should be considered a local street unless it is shown on the Highway Plan.

Response 23

The commenter states that traffic volume forecasts were not provided for in the Revised Draft EIR because a portion of Sloan Canyon Road is not shown on Figure 3.2-5, OVOV Highway Plan. The commenter quotes from page 3.2-32 of the Revised Draft EIR and concludes that the deletion of the roadway should be shown on the proposed OVOV Highway Plan.

The commenter misinterprets the verbiage quoted from the Revised Draft EIR. The purpose of Figure 3.2-5, OVOV Highway Plan, is to show the proposed Highway Plan which the Revised Draft EIR analyzed for traffic impacts. This figure does not show this portion Sloan Canyon Road as a Limited Secondary Highway because the proposed Area Plan did not designate this portion of Sloan Canyon Road as a Limited Secondary Highway, and therefore it was not analyzed in the Revised Draft EIR as a Limited Secondary Highway. The analysis in the Revised Draft EIR and Figure 3.2-5, OVOV Highway Plan, are correct as shown.

Response 24

The commenter states that the Revised Draft EIR's future traffic forecasts for Sloan Canyon Road are significantly lower than they would be with the retention of the Limited Secondary Highway designation of a portion of Sloan Canyon Road.

The commenter does not provide specifics as to why the Revised Draft EIR's future traffic forecasts for Sloan Canyon Road are significantly lower than they would be with the retention of the Limited Secondary Highway designation of a portion of Sloan Canyon Road. Removal of a Limited Secondary Highway designation does not impede or eliminate the ability of a local street to provide a connection. The commenter is directed to **Response 7**, above, regarding the difference between a Limited Secondary Highway and a local street; Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. To the extent that Sloan Canyon Road could be considered a regional "relief" for congestion on Interstate 5 and The Old Road, while it is possible that some of the traffic that travels easterly on Sloan Canyon Road to Interstate 5 and The Old Road would instead travel southerly on Sloan Canyon Road to Hillcrest Parkway or Hasley Canyon Road, the volumes (3,000 average daily trips, or ADT, total at buildout of the proposed Area Plan) would not bear out the need for a Highway designation, as a local street could handle that volume of traffic.

The output of the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) for the proposed Area Plan retained the connection of Sloan Canyon Road north of Hillcrest Parkway. This roadway was coded in the SCVCTM as a residential collector street for the analysis of the proposed Area Plan instead of the Limited Secondary Highway classification used in the analysis for the current Area Plan. The change in classification is not expected to have affected the ADT predicted by the model. The difference between the ADT projections on Sloan Canyon Road south of Hillcrest Parkway is most likely attributed to changes in land use data that was used in the SCVCTM.

The determination to reclassify Sloan Canyon Road between Hillcrest Parkway and Quail Valley Road as a Limited Secondary Highway (which by default would reclassify this route as a local street) was based

on the 2,000 ADT projected by the SCVCTM. A local street can accommodate an ADT of up to 9,000 and a residential collector street can accommodate an ADT of up to 15,000.

Response 25

The commenter states that the Revised Draft EIR does not provide forecasts to compare traffic volumes under the existing Highway Plan, including the Sloan Canyon Road connection, against the proposed Highway Plan without this portion of Sloan Canyon Road. The commenter states that Appendix 3.2 of the Revised Draft EIR (OVOV Valley-Wide Traffic Study) does not provide daily traffic forecasts with and without Sloan Canyon Road from Quail Valley Road to Hillcrest Parkway. The commenter states that the Revised Draft EIR and the OVOV Valley-Wide Traffic Study do not provide any traffic analysis for the proposed deletion of the north-south portion of Sloan Canyon Road or for the IEC recommendation to add Mandolin Canyon Road to the west as a Limited Secondary Highway.

The output of the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) for the proposed Area Plan retained the connection of Sloan Canyon Road north of Hillcrest Parkway. This roadway was coded in the SCVCTM as a residential collector street for the analysis of the proposed Area Plan instead of the Limited Secondary Highway classification used in the analysis for the current Area Plan. The change in classification is not expected to have affected the ADT predicted by the model. The difference between the ADT projections on Sloan Canyon Road south of Hillcrest Parkway is most likely attributed to changes in land use data that was used in the SCVCTM.

The determination to reclassify Sloan Canyon Road between Hillcrest Parkway and Quail Valley Road as a Limited Secondary Highway (which by default would reclassify this route as a local street) was based on the 2,000 ADT projected by the SCVCTM. A local street can accommodate an ADT of up to 9,000 and a residential collector street can accommodate an ADT of up to 15,000.

Response 26

The commenter states that Appendix 3.2 of the Revised Draft EIR (OVOV Valley-Wide Traffic Study) provides future land uses and their associated trips for 455 traffic analysis zones (TAZ) in the entire OVOV Planning Area, and that the TAZ west of Interstate 5 that could use a north-south Highway Plan connection between Mandolin Canyon Road and Hillcrest Parkway include TAZ 1, 2, 13, 14, 15, 16, 17, 18, and 19, as the land uses in these nine TAZ are forecast to generate 60,524 daily trips.

The commenter does not provide specifics as to how the 60,524 daily trips could use a north-south Highway Plan connection between Mandolin Canyon Road and Hillcrest Parkway. Removal of a Limited Secondary Highway designation does not impede or eliminate the ability of a local street to provide a connection. The commenter is directed to **Response 7**, above, regarding the difference between a Limited

Secondary Highway and a local street; Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. To the extent that Sloan Canyon Road could be considered a regional “relief” for congestion on Interstate 5 and The Old Road, while it is possible that some of the traffic that travels easterly on Sloan Canyon Road to Interstate 5 and The Old Road would instead travel southerly on Sloan Canyon Road to Hillcrest Parkway or Hasley Canyon Road, the volumes (3,000 average daily trips total at buildout of the proposed Area Plan) would not bear out the need for a Highway designation, as a local street could handle that volume of traffic.

Response 27

The commenter states that without the north-south portion of Sloan Canyon Road, trips oriented north-south in nine TAZ will be required to use The Old Road or Interstate 5. The commenter states that the Revised Draft EIR states that, without widening of Interstate 5, northbound travel will operate at LOS F and southbound travel will operate at LOS E at buildout of the proposed Area Plan. The commenter states that Sloan Canyon Road provides an alternate route for localized north-south circulation to the west of Interstate 5 and could potentially reduce the significant traffic impacts that are otherwise forecast to occur.

The commenter does not provide specifics as to how trips oriented north south in nine TAZ will be required to use The Old Road or Interstate 5. Removal of a Limited Secondary Highway designation does not impede or eliminate the ability of a local street to provide a connection. The commenter is directed to **Response 7**, above, regarding the difference between a Limited Secondary Highway and a local street; Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. To the extent that Sloan Canyon Road could be considered a regional “relief” for congestion on Interstate 5 and The Old Road, while it is possible that some of the traffic that travels easterly on Sloan Canyon Road to Interstate 5 and The Old Road would instead travel southerly on Sloan Canyon Road to Hillcrest Parkway or Hasley Canyon Road, the volumes (3,000 average daily trips total at buildout of the proposed Area Plan) would not bear out the need for a Highway designation, as a local street could handle that volume of traffic.

The commenter does not provide specifics as to how the designation of Sloan Canyon Road could potentially reduce the significant traffic impacts that are otherwise forecast to occur on Interstate 5. As noted above and in **Response 7**, above, Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. Interstate 5 serves more than localized north-south circulation within the Castaic community, as it is a major transportation corridor that links the southerly and northerly portions of the State.

Response 28

The commenter states that without a connection to the north, a significant portion of the over 2,800 daily trips to and from the middle school on Hillcrest Parkway in TAZ 19 must travel east to The Old Road before going north or west to and from their homes. The commenter states that when Interstate 5 is closed due to weather or fires, all northbound traffic is turned around, resulting in gridlocked conditions at interchanges with Sloan Canyon Road and Parker Road and along The Old Road. The commenter states that deletion of Sloan Canyon Road takes away the only alternative route that would otherwise be available for north-south circulation to the west of Interstate 5 during those times.

The commenter does not provide specifics as to why a significant portion of trips to and from the middle school must travel east to The Old Road before going north or west to and from their homes. Removal of a Limited Secondary Highway designation does not impede or eliminate the ability of a local street to provide a connection. The commenter is directed to **Response 7**, above, regarding the difference between a Limited Secondary Highway and a local street; Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. The traffic volumes forecast for this portion of Sloan Canyon Road could be accommodated by a local street.

The commenter does not provide specifics as to how the designation of Sloan Canyon Road takes away the only alternative route that would otherwise be available for north-south circulation to the west of Interstate 5 during times it is closed due to weather or fires. As noted above and in **Response 7**, above, Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. Interstate 5 serves more than localized north-south circulation within the Castaic community, as it is a major transportation corridor that links the southerly and northerly portions of the State.

Response 29

The commenter states that Sloan Canyon Road has been planned as a Limited Secondary Highway for many years. The commenter states that all necessary easements and dedications already exist for construction of Sloan Canyon Road as a Limited Secondary Highway and that Bridge and Thoroughfare (B&T) Fees have been collected for its construction. The commenter states that Romero Canyon Road has not been planned as part of the County's Highway Plan, that additional right-of-way would be necessary to convert Romero Canyon Road to a Limited Secondary Highway, and that Romero Canyon Road is a local residential street with more residential uses than Sloan Canyon Road.

The commenter correctly states that Sloan Canyon Road has been planned as a Limited Secondary Highway for many years. However, the commenter is incorrect regarding easements and dedications and

B&T fees. All necessary easement and dedications do not exist for construction of Sloan Canyon Road as a Limited Secondary Highway and B&T fees have not been collected for its construction (see **Response 10**, above).

The proposed Area Plan does not propose to designate Romero Canyon Road as a Limited Secondary Highway. Therefore, the comments on Romero Canyon Road are not relevant to the proposed Area Plan or to the Revised Draft EIR. No further response is required.

Response 30

The commenter states that the portion of Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway could accommodate up to 18,000 vehicles per day if it retained the Limited Secondary Highway designation. The commenter states that Sloan Canyon Road could only accommodate 2,500 vehicles per day as a local street, and that demand for north-south trips will exceed this capacity at buildout of the proposed Area Plan.

The commenter is incorrect. A local street can accommodate up to 9,000 vehicles per day and a residential collector street can accommodate up to 15,000 vehicles per day. The commenter is directed to **Response 7**, above, regarding the difference between a Limited Secondary Highway and a local street; Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street. The traffic volumes forecast for this portion of Sloan Canyon Road could be accommodated by a local street.

Response 31

The commenter states that the Revised Draft EIR fails to analyze the traffic trips associated with the proposed Castaic Area High School. Please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis.

Response 32

The commenter states that the County required access to and from the south and north/east for Tract No. 47807. The commenter states that, specifically, the County required access on Romero Canyon Road via Parker Road north of the project and on Romero Canyon Road via Sloan Canyon Road and Madloy Street (now known as Hillcrest Parkway) south of the project.

The commenter provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 33

The commenter states that if the William S. Hart Union High School district purchases the Tract No. 47807 for the development of Castaic High School, the prior conditions of approval for two points of would still apply to the high school. The commenter also states that the high school would generate 10 times more daily traffic than the 77 single-family homes, creating an even greater need for two accesses to the north/east and south of the site.

The comment is oriented towards a potential project, not the Revised Draft EIR, and only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required given that the comment does not address or question the content of the Revised Draft EIR. Nonetheless, please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis.

Response 34

The commenter states that a traffic study for the proposed Castaic High School indicates that a significant traffic impact would occur at The Old Road and Parker Road if access is only provided to the north/east. The commenter states that the significant impact could not be mitigated and that Sloan Canyon Road west of Quail Valley Road would require four lanes instead of two lanes, as recommended by the proposed Area Plan.

The comment is oriented towards a potential project, not the Revised Draft EIR. As of the date the Revised Final EIR for the proposed Area Plan was released, a Draft EIR for the proposed Castaic High School project had not been released, so the commenter is speculating as to significant impacts. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required given that the comment does not address or question the content of the Revised Draft EIR. Nonetheless, please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis.

Response 35

The commenter states that a traffic study for the proposed Castaic High School has not fully evaluated a second access to and from the south for the high school site. The commenter expresses his opinion that Sloan Canyon Road as originally planned and included in the Highway Plan would disperse high school traffic. The commenter states that with the connection of Sloan Canyon Road between Mandolin Canyon Road and Hillcrest Parkway, significant and unmitigated traffic impacts at The Old Road and Parker Road many not occur and the widening of Sloan Canyon Road will probably not be needed. The

commenter states that the OVOV Valley-Wide Traffic Study and the traffic study for the proposed Castaic High School must conduct further traffic analysis of the southerly second access for circulation and emergency access for the high school site based on buildout conditions.

The comments oriented towards the proposed Castaic High School are oriented towards a potential project, not the Revised Draft EIR. As of the date the Revised Final EIR for the proposed Area Plan was released, a Draft EIR for the proposed Castaic High School project had not been released, so the commenter is speculating as to significant impacts. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required given that the comment does not address or question the content of the Revised Draft EIR. Nonetheless, please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis.

The comment that the OVOV Valley-Wide Traffic Study must conduct further analysis only expresses the opinion of the commenter. The commenter is referred to **Response 4**, above, regarding the traffic analysis, and **Response 8**, above, regarding project specific traffic analysis.

Response 36

The commenter states that the Revised Draft EIR failed to analyze the traffic trips associated with the proposed Castaic High School, and that if the Hart District proceeds with a high school at Tract No. 47807 or at any other sites previously considered, the north-south part of Sloan Canyon Road provides necessary access to the high school as well as an important connection for area circulation. The commenter states that it is premature for the County to delete Sloan Canyon Road from Mandolin Canyon Road to Hillcrest Parkway at this time, only to add this critical facility back into the Highway Plan within the next year in response to traffic needs associated with the new high school.

Please see **Response 5**, above, regarding the proposed Castaic High School, and **Response 8**, above, regarding project specific traffic analysis. The commenter is directed to **Response 4** and **Response 12**, above, regarding adequate emergency/secondary access. The commenter is directed to **Response 7**, above, regarding the difference between a Limited Secondary Highway and a local street; Sloan Canyon Road would be developed with two travel lanes regardless of whether it is designated as a Limited Secondary Highway or as a local street.

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

Response 37

The comment summarizes traffic issues that have been addressed above. No further response is required.

Response 38

The comment summarizes traffic issues that have been addressed above. No further response is required.

1/4



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January 21, 2011

Mitch Glaser, AICP
Supervising Regional Planner
Countywide Studies North Section
Department of Regional Planning, Los Angeles County
320 West Temple Street
Los Angeles, CA 90012

RE: Proposed Land Use Designation in the Draft "One Valley One Vision" Santa Clarita Valley Area Plan

Dear Mr. Glaser:

Thank you for taking the time to meet with my development team again this past Wednesday. As owner and developer of Tapia Ranch, VTTM #53822, located in the Castaic area of unincorporated Los Angeles County, I would like to reiterate my development team's position that the appropriate "One Valley One Vision" Santa Clarita Valley Area Plan land use designation for the parcels comprising the Tapia Ranch project should be RL2, rather than the currently proposed RL5 and RL10. These land use designations are inconsistent with the Castaic community's development objectives for the Tapia Canyon and Charlie Canyon areas and are in conflict with the pending Tapia Ranch subdivision application currently in process with county staff. (Please see the attached section of the draft OVOV Land Use Map and list of parcels comprising the Tapia Ranch project.)

The Tapia Ranch development team endorses the request by the Castaic Town Council to retain the density of the existing zoning and land use designation for the Tapia Canyon and Charlie Canyon areas. The current zoning and land use designation for this area is A-2-2/Hillside Management. The land use designation of RL2 would retain the existing character of the area and conform to the development guidelines of the Castaic Community Standards District Ordinance (CSD). This is a contained area bordered by Tesoro del Valle development to the east, the Angeles National Forest to the north, the Pitchess Detention Center to the south and Interstate 5 to the west; therefore, retention of the existing General Plan development density allowance would not be an encouragement for urban sprawl.

As the Regional Planning Commission affirmed in the recent public hearing on December 8, 2010, the Castaic Town Council was formed to represent the interests of the Castaic community and provide valuable input on local planning issues, including defining standards for development within their community. If the Castaic community had expressed the desire for reduced density in the Tapia and Charlie Canyon areas, it would have been reflected in the CSD.

The Tapia Ranch project is compliant with the current A-2-2 zoning, requiring no changes in zoning or amendments to the General Plan. The project was designed to not only comply with, but to exemplify the development guidelines of the Castaic CSD. Preservation of the significant ridgelines delineated in

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the CSD is the driving force behind the current land plan. Years of cooperative input between the Castaic community and the development team have contributed to the design of Tapia Ranch, and the project has been consistently supported and recommended for approval by the Castaic Town Council and the local community.

Staff's response to written comments state that the justification for reducing the allowable density in Tapia Canyon was significant topography, geological constraints, and access to existing infrastructure and emergency services. This is a broad generalization of the undeveloped areas of Santa Clarita Valley and does not accurately reflect the characteristics of the Tapia Ranch project site. The geotechnical report prepared for the project determined that the proposed development is feasible and acceptable as planned. Water and sewer infrastructure are adjacent to the project improvement boundaries on Tapia Canyon Road and construction of the Tapia Ranch roadways will increase regional access for emergency services. Additionally, commercial services such as grocery stores, hardware stores, and recreational areas are within minutes of the project area.

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We commend the recent revision to the OVOV plan to incorporate clustering provisions in the Rural Land (RL) land use designations. These provisions allow for environmentally sound land planning, open space preservation, and efficient infrastructure planning. We support the county's OVOV planning efforts and we respectfully request that the Land Use Element be revised to reflect the RL2 land use designation for the Tapia Canyon area, ensuring consistency with existing land use as well as the pending Tapia Ranch development, VTTM #53822.

Sincerely,

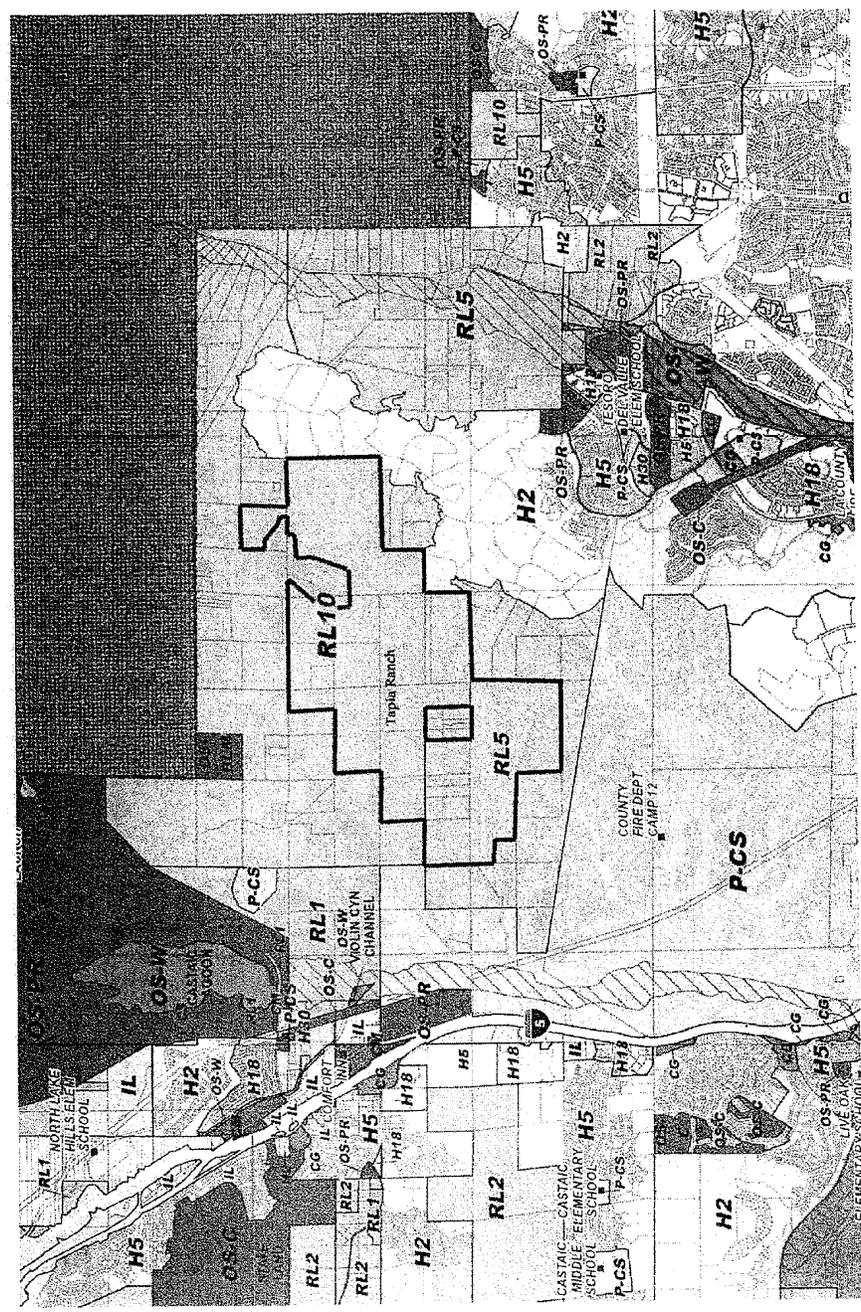
William Barkett
Managing Member
Castaic Partners, LLC

Attachments:

- Section of OVOV Land Use Map
- List of Tapia Ranch Parcels

CC:

- Edel Vizcarra, Office of Supervisor Antonovich
- Jon Sanabria, Los Angeles County Department of Regional Planning
- Chuck Moore, Cox, Castle & Nicholson
- Karen Cunningham, Cunningham Development



4/4

Tapia Ranch VTTM # 53822 Subject Parcels By Assessor Parcel Number

- 2865-005-002
- 2865-005-003
- 2865-005-005
- 2865-005-006
- 2865-005-008
- 2865-005-017
- 2865-005-018
- 2865-005-019
- 2865-005-020
- 2865-005-021
- 2865-005-024
- 2865-005-025
- 2865-006-001
- 2865-006-002
- 2865-006-011
- 2865-006-012
- 2865-006-013
- 2865-006-014
- 2865-021-016
- 3244-023-017
- 3244-024-011
- 3244-024-013

Letter No. D80

Letter from Castaic Partners LLC, January 21, 2011

Response 1

The commenter identifies himself as owner and developer of Tapia Ranch, Vesting Tentative Tract Map 53822 (VTTM 53822), and reiterates his development team's position that the appropriate land use designation for the Tapia Ranch parcels is Rural Land 2 (RL2), rather than the proposed Area Plan's Rural Land 5 (RL5) and Rural Land 10 (RL10) land use designations. The commenter states the proposed Area Plan's land use designations are inconsistent with the Castaic community's development objectives for the Tapia Canyon and Charlie Canyon areas and are in conflict with the pending Tapia Ranch subdivision application currently in process. The commenter lists several other factors to support consideration of his request for an RL2 land use designation.

The comment raises issues pertaining to the proposed Area Plan's land use designation of VTTM 53822 that do not appear to relate to any physical effect on the environment. The comments regarding inconsistency with the Castaic community's development objectives, conflict with the pending application currently in process, and other factors only express the opinion of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. It should be noted that the proposed Area Plan's Introduction includes the following language: "Completed applications filed prior to the effective date of this Area Plan shall be allowed to be reviewed for consistency with the previously adopted Area Plan. Projects may be maintained as originally approved provided the approval is still valid and has not expired. Any subsequent change(s) of use or intensity shall be subject to the policies of this Area Plan." Therefore, if VTTM 53822 is a completed application filed prior to the effective date of the proposed Area Plan, it shall be allowed to be reviewed for consistency with the current Area Plan, not the proposed Area Plan. Furthermore, if VTTM 53822 is approved, the project may be maintained as originally approved, provided that such approval is still valid and has not expired. VTTM 53822, if approved, would be subject to the policies of the proposed Area Plan only if changes of use or intensity are proposed after approval, provided that the Board of Supervisors adopts the aforementioned language in the proposed Area Plan's Introduction and provided that VTTM 53822 is a completed application filed prior to the effective date of the proposed Area Plan.

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January 21, 2011

Mr. Mitch Glaser
County of Los Angeles
Regional Planning Department
320 W. Temple Street, Room 1352
Los Angeles, CA 90012

RE: Comments to the Draft Environmental Impact Report (DEIR) for the Santa Clarita Valley Area Plan (One Valley, One Vision)

Dear Mr. Glaser:

Please consider and respond to the following comments to the DEIR for the Santa Clarita Valley Area Plan OVOV.

- Please verify the Angeles National Forest (USFS) boundary for the County territory near the Lang Station area, an area east of what is frequently referenced as the Sand Canyon area. It appears that the Forest Service boundary may be depicted imprecisely.
- The DEIR Land Use discussion does not provide the reader with a clear understanding of the Forest Service's role in private property land use entitlements, or how the USFS interfaces with the applicable local jurisdiction on land use issues. Who is the lead agency in situations where private property lies within the USFS boundary? What is the role for the USFS if the County is the lead agency? Might the USFS have a need to rely on the OVOV EIR in the future?
- The Land Use Classifications (Zoning) in the Lang Station area, aka Sand Canyon East, appear to encourage a severe downgrade from the existing zoning. It is understandable that the SEA has increased in area, but the DEIR identifies no impacts from the Plan that would necessitate such zoning modifications for existing disturbed properties. Particular concern is expressed for the loss of M-1.5 zoning in the vicinity of the Antelope Freeway / Soledad Canyon Road / Railroad in favor of A-2-2 zoning. The properties affected by this change are generally properties which have historically been used for industrially-related enterprises aligned along this important transportation corridor. (Exhibits attached for sub-regional location reference only)
- DEIR Section 3.10 describes the mineral resources of the region, the existing setting, jurisdictional framework, and includes a significant discussion on the history of the CEMEX issues. It identifies no impacts or mitigation measures, yet Figure 3.10-1 illustrates areas where existing and former mining properties could be reclaimed for new economically productive end uses. The EIR fails to seize the opportunity to create additional measures to ensure restoration of previously mined properties to a new productive end use, all to the benefit of the environment. Policy CO 2.3.5 does part of the job, but the following would provide even more support to the goal.

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RGP Planning & Development Services

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Urban & Regional Planning • Environmental Impact Reporting • Regulatory Services • Acoustical Science

“Encourage the operators of existing surface mines to consider an end use site restoration plan that will result in a land use conversion to aide in implementation of the jobs-housing balance policy, economic vitality policy, and which reinforces the image of the Santa Clarita Valley as an eco-conscious region.”

and / or,

“It is acknowledged that to achieve a new or environmentally superior end use of existing mining sites may require future amendments the OVOV Plan. This would be a beneficial outcome if the proposed end use achieves the goals of creating new jobs, reducing commuting distances, places service-oriented land uses along transportation routes and improves the Valley’s visual and aesthetic identity.”

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RGP Planning & Development Services represents a number of clients in the Santa Clarita Valley; this letter represents the interest of no one particular client. RGP applauds the City of Santa Clarita and the County of Los Angeles on what appears to be a most successful planning venture to guide the future of the Santa Clarita Valley. We additionally applaud the quality of the CEQA document which has taken a very large subject and made it manageable for the reader. Our comments are meant to improve the value of the document and not to be critical of the analyses it presents.

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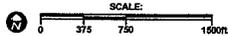
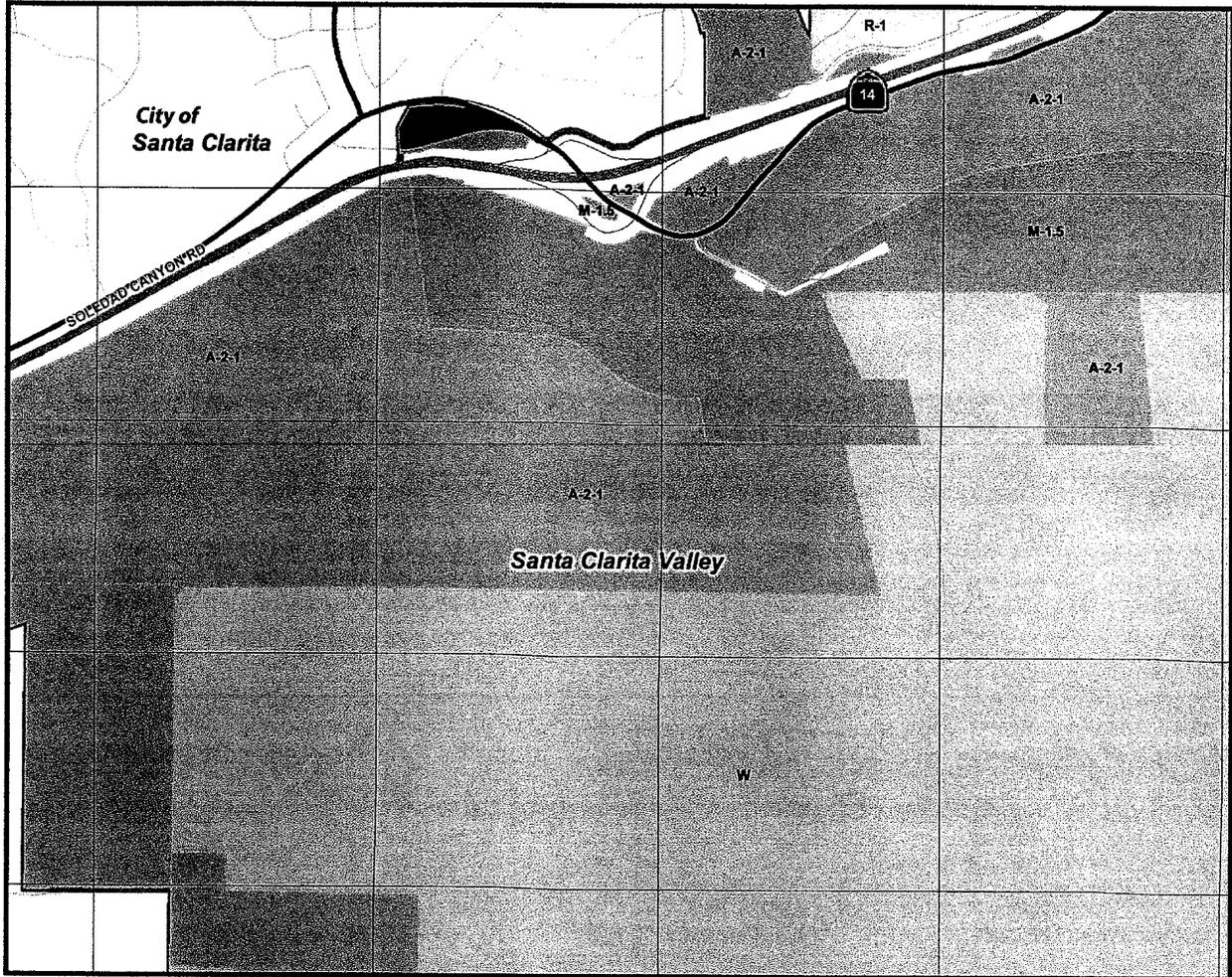
Respectfully submitted,
RGP Planning & Development Services



Richard K. Goacher
Founder

Attachments (2)

c:\users\rick\desktop\santa clarita ovov deir comment ltr 012111.docx



SOURCE: LA CO. GENERAL PLAN - SCVAP

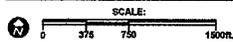
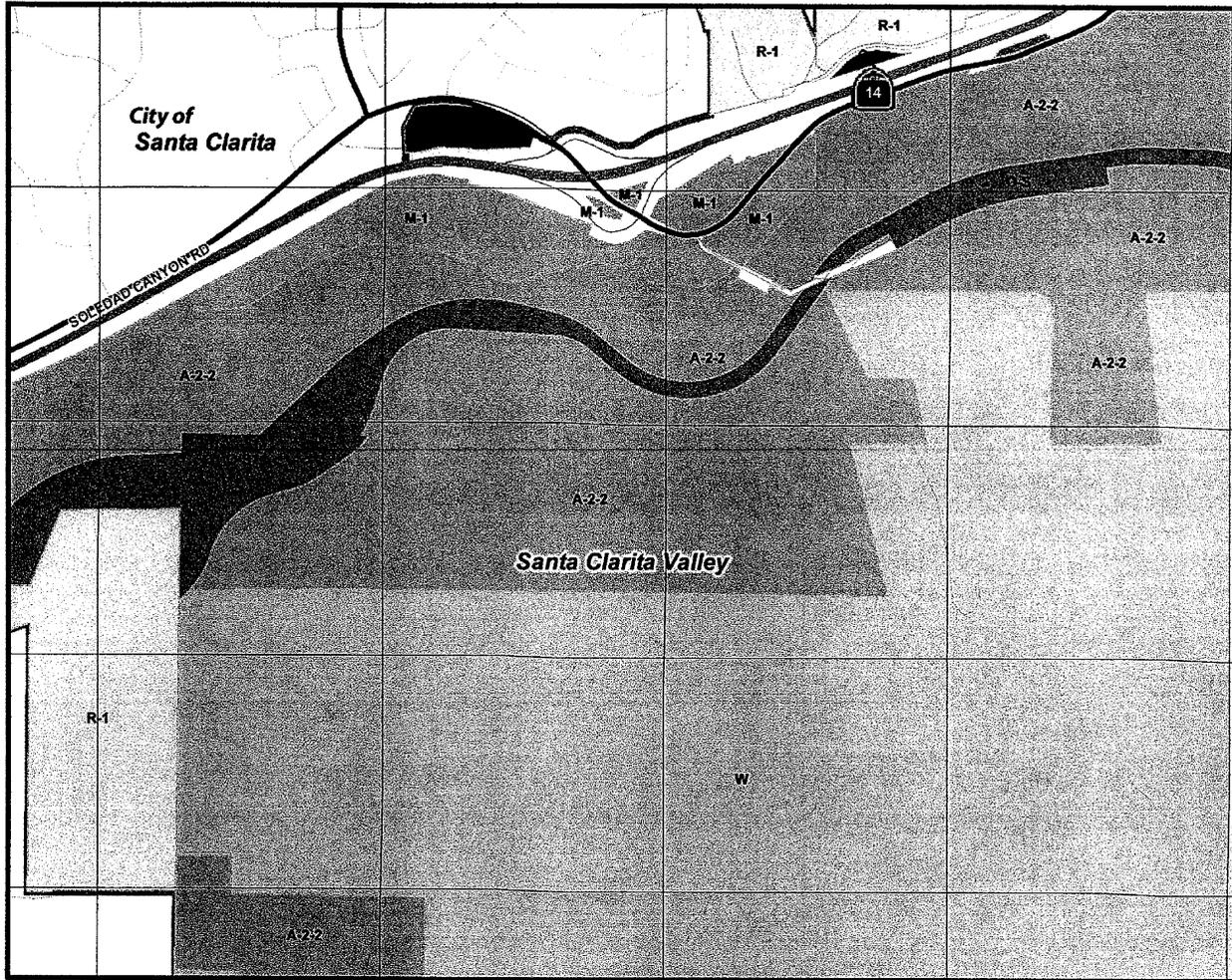
Legend:

- A-2-1 Heavy Agriculture
- C-2 Neighborhood Commercial
- M-1.5 Restricted Heavy Manufacturing
- R-1 Single Family Residential
- W Watershed



EXISTING ZONING CLASSIFICATIONS

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SOURCE: LA CO. GENERAL PLAN - SCVAP

Legend:

- A-2-2 Heavy Agriculture
- C-2 Neighborhood Commercial
- M-1 Restricted Heavy Manufacturing
- O-S Open Space
- R-1 Single Family Residential
- W Watershed



PROPOSED ZONING CLASSIFICATIONS

Letter No. D81

Letter from RGP Planning & Development Services, January 21, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The commenter questioned the accuracy of the Revised Draft EIR's depiction of the Angeles National Forest (ANF) boundaries near the Sand Canyon and Lang Station areas within the unincorporated Santa Clarita Valley. County staff has reviewed the boundaries and has verified that they are accurately depicted in the Revised Draft EIR.

Response 3

The commenter raises issues concerning land use entitlements within the ANF, administered by the United States Forest Service (USFS), which do not appear to relate to any physical effect on the environment. Specifically, these issues concern what role the USFS would have if a development project were proposed in the ANF, who would be the lead agency for the purpose of processing land use entitlements, and whether the USFS would need to rely upon the Revised Final EIR. The Revised Draft EIR is a Program EIR that does not analyze any particular development project. At such time that a development project is submitted, both the County and USFS would rely upon guidance from both the CEQA and NEPA Guidelines to determine who would be the lead agency for the purpose of processing land use entitlements. At such time an environmental document is prepared for the proposed development project, the document preparer would decide whether or not the Revised Final EIR would be used as a tier document. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 4

The commenter raises issues regarding the zoning of properties in the Sand Canyon and Lang Station areas within the unincorporated Santa Clarita Valley. The commenter is correct in that the Revised Draft EIR did not conclude that the proposed change in zoning from M-1.5 to A-2-2 would not result in an environmental impact. The proposed Area Plan's land use designation for this area is Rural Land, and M-1.5 zoning is inconsistent with this land use designation, which necessitates the change in zoning to A-2-2. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed project. However, because the comment does not raise an environmental issue, no further response is required.

Response 5

The commenter suggests that the OVOV planning effort and the proposed Area Plan that was developed through the OVOV did not completely take advantage of opportunities to reclaim old mining areas for new productive end uses that would further support Policy CO 2.3.5 in the proposed Area Plan. The commenter proposes several policies that would further support mining area re-use.

County staff has added the following policy and discussion to the Area Plan to address the commenter's concerns:

Policy LU 7.7.3: Encourage the operators of existing surface mines to consider an end use site restoration plan that will result in land use conversions to aide in implementing the jobs-housing balance policies, economic vitality goals and policies, and which will reinforce the image of the Santa Clarita Valley as an eco-conscious community.

In addition, County staff has added the following language to the description of the Sand Canyon area within the proposed Area Plan's Land Use Element to address the commenter's concerns:

The eastern portion of the Sand Canyon region, outside the Santa Clarita city limits, is home to disturbed lands resulting from current and past aggregate mining practices, former military industrial support activities, and Superfund hazard properties. It is to the benefit of the region to have these properties restored to an economic land use rather than left in a disturbed state. These highly impaired lands are appropriate for future conversion to land uses complementary to the surrounding topography, national forest, and Santa Clara River setting. Such land uses should be consistent with the policies of this plan including jobs/housing balance, shortened commute times, and siting of new uses largely within the footprint of the disturbance area. Such uses should be planned so as to avoid adverse effects on the Santa Clara River Significant Ecological Area.

Lastly, County staff has added the following language to the Mineral Resources Section within the proposed Area Plan's Conservation and Open Space Element to address the commenter's concerns:

Where restoration to open space is not a practical end use solution, an alternative development program which contributes to economic development, jobs-housing balance, and/or destination eco-tourism should be encouraged.

Response 6

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1/4

Susan M. Carey, Esq.
27143 Crystal Springs Road
Canyon Country, CA 91387

January 23, 2011

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

RE: Los Angeles County One Valley One Vision Draft Program EIR and
Santa Clarita Valley Area Plan Update

Dear Mr. Glaser:

Thank you for your response to my previous letter regarding the County's OVOV Plan. I have the following comments regarding the EIR and Plan that were not covered in my previous letter that I would like to see incorporated in the revised EIR.

1

On Page 3.3-75 of the EIR, in the first paragraph under the heading Carbon Monoxide, the EIR states:

"Ambient concentrations of CO that exceed state and/or federal standards are termed CO "hotspots." Intersections operating at LOS of E or F have the potential to create a CO hotspot.

There are no known CO hotspots in the OVOV Planning Area under existing conditions. According to Tables 4-2 and 4-3 of the project traffic report (**Appendix 3.2**), future levels of service at principal intersections at buildout under both the existing Area Plan and General Plan and under the proposed Area Plan and General Plan will either remain the same or improve. As a result, there would be no potential for future increases in CO concentrations and CO hotspots in the OVOV Planning Area and CO impacts under this criterion would be less than significant."

2

I could not access the Tables cited in Appx. 3.2 due to the size of the Appendix file at the County's OVOV website, but Table 3.2-9 on page 3.2-38 of the Transportation and Circulation section of the EIR shows a number of County intersections that are LOS level E at buildout of the OVOV Area Plan (e.g., intersections 37, 95, 96, 98, 99, 247, 258 and 262), which would contradict the above statement that there will be no hotspots. The statement in the above quoted paragraph should therefore be changed or explained to account for the data in Table 3.2-9.

In the Transportation and Circulation element, there are numerous references to the promotion of walking and biking as means of transportation in the planning area to reduce vehicle trips, air pollution and greenhouse gasses, but the increase in air pollution is going to increase the number of days designated as 'poor air quality' when the public is warned to avoid outside activities such as walking and biking, which will decrease the use of walking

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and biking as transport modes. There is also no analysis of the impact of temperature and weather in the Planning area and how that may reduce the use of walking and biking compared to other communities in more moderate climates. In other words, the expectations of the reduction in vehicle trips due to people walking and biking instead of driving is probably overstated due to our local weather which is often very hot, very cold or very windy.

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On page 3.19-2 of the Population Element, under the heading Jobs/Housing Balance, the second sentence needs clarification because the statement that "Achieving a jobs/housing balance can significantly reduce the total number of vehicle trips . . ." would only be true if (1) the jobs added within the Planning Area provide income sufficient to support the cost of the employee living within the immediate area, and (2) such jobs are suitable for and match the qualifications of the local residents, otherwise, the current population is likely to be displaced by persons qualified and/or willing to take the jobs created in the Planning Area, which I don't think is an intended consequence of the Plan.

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On page 3.19-3 of the Population Element, under the heading Growth Projections, it would be more clear and accurate to include in the second sentence the percentage increases in population (a 227% increase), housing units (a 230% increase) and jobs (a 146% increase), and delete the last sentence which is currently inaccurate because population and housings are more than TRIPLING, not "doubling". These corrections and clarifications are significant because the current wording of this section on population growth is extremely difficult to follow, making it difficult for the public to understand the HUGE increase in population and housing that the County is fostering and providing for by means the OVOV Plan.

5

On page 3.19-4, under Regulatory Framework, SCAG Regional Housing Needs Assessment, an explanation should be added to this section as to whether the County, as a member in a COG planning region is REQUIRED by law to plan for and allow construction of housing units "to accommodate the housing growth estimated by the RHNA". This section as currently written implies that this is some kind of legal requirement, but I know there are other nearby cities, such as Simi Valley, Thousand Oaks and Santa Monica that have adopted growth restrictions, which indicates that there is a way to avoid any such legal obligation for a city or county to accommodate a RHNA housing allocation. If there is such a legal obligation for the County to participate in the COG and RHNA processes, and therefore allow construction of all the housing units allocated to the County, more explanation should be included of whether there are any limiting factors on the allocation for a particular area, such as quality of life considerations, health of the residents due to increased air pollution resulting from increased population, etc.

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If there is not such a legal obligation, the paragraph should be clarified to explain that, and also explain why the County has adopted the population growth numbers in Table 3.19-1 as the appropriate population for this area, and by adopting this Plan is fostering buildout to accommodate that tripling in population, when doing so will subject the residents to a significantly decreased quality of life, including traffic gridlock, hazardous levels of air pollution, unacceptable levels of greenhouse gas emission, high-density vertical housing and commercial development throughout the area that is incompatible with current lifestyles and neighborhoods, and the other negative impacts of high-density development.

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Also on page 3.19-4, at the end of the second paragraph, the words “for 2014” should be added to the end of the last sentence to clarify that the number of housing units described in that sentence is only to meet the RHNA allocation for the period 2005 to 2014, not the entire buildout period to 2035 which has been the relevant time period used in previous sections describing future housing units to be added to the area.

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Similarly, Table 3.19-2 should have the words “for 2014” added to the end of the title to make clear that the number of housing units in the table are only to satisfy the allocation up to 2014. Without these changes, the wording in the sentence above the table and the table are misleading in significantly understating the ENTIRE number of housing units that will be required to be built in the area under RHNA allocations for the entire period until 2035 buildout.

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On page 3.19-6, the second paragraph should include explanation of how the County will consistently enforce the policies described in that paragraph to prevent development and construction on undeveloped and remote land, open space and natural areas, because (1) it is difficult, if not impossible, to see how a TRIPLING of the number of housing units within the Planning Area will be accomplished solely within “previously developed or urban areas” by infill as described in this paragraph, and (2) there is a long history of the County permitting development of natural, undeveloped, remote and open space land in this area through exceptions, plan amendments and other arrangements regardless of zoning and existing land use designations.

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Similarly, on page 3.19-7 the paragraph under the heading Effectiveness of Proposed Area Plan Policies should be supplemented with additional information as to how the County will consistently apply and enforce the policies described in the second sentence that the County is stating will ensure there will be no urban sprawl or “substantial indirect growth impacts” in connection with the vast increase in population and housing unit numbers planned for the area, as has been the case in the past.

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In addition, this section should include explanation of how the County will consistently and effectively enforce the policies affecting urban sprawl and development of natural, undeveloped, remote and open space in conjunction with the City of Santa Clarita to accomplish the purposes that are SHARED by the City and County by virtue of adopting similar policies in both OVOV plans of the City and County. As I understand it, there is no process currently planned by which the County can do anything to force the City to follow any policy within the City’s jurisdiction, and vice versa – so there is no effective means for either entity to ensure that the other entity enforces the policies that both entities (and the residents) are counting on to make the OVOV plans actually work to accomplish the goals stated by the County and City in both plans. This is a significant and potentially fatal flaw of the two OVOV plans and threatens to undermine both entities accomplishing any of the goals stated in the Plans.

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On page 3.19-7 the paragraph under the heading Plan to Plan Comparison should be clarified to explain why the population numbers in the third sentence do not match the numbers in Table 3.19-1. As currently written, the paragraph is completely confusing and misleading as it indicates that the population in the Planning Area at buildout under the proposed plan will be 237,387 and not the 434,773 number in Table 3.19-1.

18

19

Mitch Glaser
1/25/2011
Page 4

As a general comment on the Plan and EIR: the goals of the Plan will not be accomplished if past practices of Plan amendments, zoning changes and other exceptions to density and land use designations are permitted as they have been by the County in this area in the past. The County should adopt much more restrictive practices for permitting any such exceptions to the Plan once adopted, and should also implement the following mitigation measures to ensure accomplishment of the Plan goals:

20

Tract map extensions should not be permitted. The practice of granting extensions to tract maps has resulted in construction of projects long after approval, when the project design and other attributes often would not have been approved under current approval criteria. This delayed development practice makes it very difficult to manage growth and development effectively, and therefore should no longer be permitted. If that poses legal problems, the County should change the extension process to only grant an extension if the project meets all approval criteria applicable at the time the extension is requested.

21

Density increases for a project should only be permitted if the developer obtains for the County an equivalent density decreases on another parcel or project within a half-mile radius of the project area. This would ensure that the overall density of an area would not increase beyond the Plan limits, which is critical to accomplishing the goal of the Plan to preserve low density in the outlying areas.

22

Residential projects should only be approved if job growth in the Planning Area is accomplished to achieve the reduction in vehicle trip length by 1.9 miles/trip. Since reductions in traffic, air pollution and greenhouse gas emission is predicated in the Plan on an increase in local jobs that will reduce vehicle trip lengths by 1.9 miles per trip, the required job increases should be accomplished and reduction in vehicle trip length confirmed by 3rd party study before any residential development is approved.

23

No construction permitted within 500-year floodplains. This would preserve natural land for much needed groundwater recharge areas, wildlife corridors and natural open space, and prevent further channelization and disruption of the natural streambeds of the Santa Clarita River and other streams in the area. The practice of artificially filling and raising stream banks so that they are no longer designated to be in the FEMA floodplain is permitting high-density projects to be built in areas subject to flooding, and destroying some of the best land remaining in the valley for groundwater recharge, which is essential to maintaining the groundwater supply needed to support the growth planned for the area.

24

Sincerely,

Susan M. Carey

Letter No. D82

Letter from Susan Carey, Esq., January 23, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The commenter cites several paragraphs within the Revised Draft EIR concerning hotspots and the commenter asserts that if the Revised Draft EIR identified intersections that have a Level of Service (LOS) E or F at buildout of the proposed Area Plan, then those intersections must be hotspots. That is not the case. The second sentence noted by the commenter states, "Intersections operating at LOS of E or F have the *potential* [emphasis added] to create a CO hotspot." The hot spot analysis was run using buildout numbers and no CO hotspots would be generated. Merely having an intersection at LOS E or F does not necessarily create a CO hotspot.

Response 3

The commenter states that while the Circulation Element in the proposed Area Plan makes numerous references to walking and bicycling and how these activities could reduce air pollution, no one will participate in these activities because the number of days designated as "poor air quality" will increase and the advantages of these activities won't occur.

The commenter does not provide any evidence, besides opinion, that bicycling and walking will not occur due to air quality impacts. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed project. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also indicates that there is no analysis of the weather and temperature in the Santa Clarita Valley planning area in the Revised Draft EIR and how it may reduce walking and bicycling when compared to other communities in moderate climates.

The commenter is directed to Revised Draft EIR Section 3.3, Air Quality, pages 3.3-1 through 3.3-6, which discuss the importance of regional and local climates with regard to air quality and the effect that regional and local climates have on air quality.

The commenter's request that the Revised Draft EIR provide a comparison of walking and bicycling within communities that may have a more temperate climate does not appear to relate to any physical effect on the environment. The requested analysis is not required for the Revised Draft EIR. The comment will be included as part of the record and made available to the decision makers prior to a final decision

on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 4

The commenter expresses an opinion that a job/housing balance can significantly reduce the number of vehicle trips only if the jobs are provided in the Santa Clarita Valley planning area, such jobs provide adequate income, and such jobs are suitable for and match the qualifications of local residents. The commenter expresses the opinion that if these conditions do not occur, the existing population would be displaced by a qualified workforce.

The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 5

The requested additions of percentages to Section 3.19, Population Projections, page 3.19-3 of the Revised Draft EIR has been made. Please see the portion of the Revised Final EIR entitled, "Revised Draft EIR Pages," for the actual text revision. It should be noted that the comment is referring to population projections developed and maintained by the Southern California Association of Governments (SCAG), not to buildout numbers generated by the County of Los Angeles and the City of Santa Clarita as part of the One Valley One Vision (OVOV) planning effort. The County of Los Angeles has no control over SCAG's population projections. The commenter also suggests that the last sentence of the second paragraph is incorrect and should be removed. The County does not believe that the sentence referenced is incorrect. Therefore, it will remain in the section.

Response 6

The commenter states that the aforementioned changes and clarifications to Section 3.19, Population Projections are significant.

Additional information regarding population projections for the Santa Clarita Valley is also provided in Section 3.19, Population and Housing, of the Revised Draft EIR:

"According to [the Southern California Association of Government's (SCAG)] Growth Forecast, the population of the entire unincorporated subregion is expected to grow from 132,797 residents in the year 2005 to 434,773 residents in the year 2035." (Revised Draft EIR, p. 3.19-3.)

"In 2008, the population of the County's Planning Area was approximately 75,000 residents. Buildout of the proposed Area Plan Land Use Map would increase the

County Planning Area's population by 162,387 residents to a total population of approximately 237,387 residents." (Revised Draft EIR, p. 3.19-5.)

"SCAG projects that the population of the unincorporated North Los Angeles County subregion, which includes unincorporated portions of the Santa Clarita Valley as well as unincorporated areas of the Antelope Valley, will increase from 132,797 residents in year 2005 to 434,773 residents in year 2035, for a total increase of 301,975 residents (no population projections from SCAG are presently available for this region after year 2035). Accordingly, SCAG projects substantial population growth (over 227 percent) throughout unincorporated North Los Angeles County during the current planning period. Since buildout of the proposed Area Plan would increase the population of the unincorporated Santa Clarita Valley by 162,387 residents by year 2035, and given that the population of the entire unincorporated North Los Angeles subregion is projected to increase by 301,976 residents by 2035, implementation of the proposed Area Plan would account for approximately 54 percent of this growth." (Revised Draft EIR, p. 3.19-6.)

As indicated by the above excerpts, the level of population growth contemplated by the proposed Area Plan is generally consistent with SCAG's regional projections and is required to accommodate long-term growth trends anticipated in the unincorporated North County subregion, which includes the unincorporated Santa Clarita Valley and the unincorporated Antelope Valley. As indicated in the above excerpts, the population growth projected in the unincorporated Santa Clarita Valley represents only 54 percent of the population growth projected by SCAG in the North County subregion.

The comment regarding a "HUGE increase in population and housing that the County is fostering" only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 7

The comment suggests that additional language be included under Regulatory Framework, SCAG Regional Housing Needs Assessment (RHNA) to note that by law the County must allow construction of housing growth estimated by the RHNA. Language is already included in the three paragraphs under this section to note that the County must plan to accommodate housing growth estimated by the RHNA. Page 3.19-5 states: "Los Angeles County complies with state requirements and provides additional incentives to promote affordable housing construction including fee waivers, reduced setbacks, increased height limits, and additional density increases."

Please also see **Letter E11, State of California, Department of Justice, Attorney General, Response 18.**

Response 8

The commenter states that some cities that have adopted growth restrictions that enable those cities to avoid RHNA requirements. The commenter is not correct in her assumptions. Adopting growth restrictions does not exempt any jurisdiction from planning for RHNA requirements.

Numerous jurisdictions have faced Housing Element litigation, including the following partial listing: Alameda, Benicia, Camarillo, Corte Madera, Dana Point, Encinitas, Folsom, Fremont, Healdsburg, Mendocino County, Mission Viejo, Napa County, Oxnard, Pasadena, Pittsburgh, Pleasanton, Rohnert Park, San Diego, Sacramento County, Santa Cruz County, Santa Monica, Santa Rosa, Seal Beach, and Sonoma County. None of them have been successful with regard to citing growth control limitations.

No further response is required.

Response 9

The commenter is requesting additional explanation be included in the Revised Draft EIR as to whether there are any limiting factors on the RHNA allocation for a particular area, such as quality of life considerations, health of the residents due to increased air pollution resulting from increased population.

There are no limiting factors for RHNA housing in a particular area.

The County would process a residential project the same as a regular development application. Any project requiring a discretionary action would be reviewed by the Planning Commission and perhaps the County Board of Supervisors. It is up to the decision-making body to take into consideration quality of life and any health issues that could arise from a project.

Please also see **Letter E11, State of California, Department of Justice, Attorney General, Response 18.**

Response 10

The commenter requested an explanation from the County as to why the County adopted the population estimated outlined in Table 3.19-1 in the Revised Draft EIR, which in her estimation would severely degrade the quality of life, create traffic gridlock, hazardous levels of air pollution, unacceptable levels of greenhouse gas emissions, and would result in high density housing and commercial development that is incompatible with current lifestyles. We direct the commenter to the title of Table 3.19-1, "SCAG's Growth Forecast for Unincorporated North Los Angeles Subregion." The County of Los Angeles did not adopt these numbers—these are SCAG generated numbers. Please see Section 2.0, Project Description, page 24: "The unincorporated County population would be 237,387." Please also see **Response 6** above.

Response 11

The commenter suggests that the year 2014 be added to the end of the second paragraph on page 3.19-4 of the Revised Draft EIR to clarify that the RHNA numbers discussed are not for the entire buildout period. We direct the commenter to the second sentence of the second paragraph on page 3.19-4, which states: "In 2007, SCAG calculated the RHNA for its six-county region for the period 2006 to 2014." Clearly, the discussion states that the RHNA provided are for the 2006–2014 period. No further response is required.

Response 12

The commenter suggests that time frames be included in Table 3.19-2 in the Revised Draft EIR to clarify the RHNA numbers and associated periods. While the County believes that the periods outlined are clearly discussed in the preceding paragraph, the requested correction to Section 3.19, Population/Housing, pages 3.19-4 of the Revised Draft EIR has been made. Please see the portion of the Revised Final EIR entitled, "Revised Draft EIR Pages," for the actual text revision.

Response 13

The commenter suggested that there be additional language explaining how the County will consistently enforce the policies preventing development on undeveloped and remote land and how difficult it is to accomplish these policies "solely within 'previously developed or urban areas.'" The County will review all development project for consistency with the Area Plan as it does presently. The commenter did not cite the entirety of the discussion referenced which does not state that development shall be "solely within previously developed or urban areas. Section 3.19, Population and Housing of the Revised Draft EIR states:

"Implementation of the proposed Area Plan would indirectly induce population growth if it proposes or otherwise facilitates the extension of roads and other infrastructure beyond the boundaries of the County's Planning Area. However, the policies of the proposed Area Plan consistently promote urban infill and discourage the introduction of new uses on remote and undeveloped land. In fact, **Policy CO 3.1.1** explicitly states that the Land Use Map and the development review process shall concentrate development into previously developed or urban areas to promote infill development and prevent sprawl and habitat loss. Additionally, the proposed Area Plan promotes incentives for infill development and rebuilding to limit impacts on open space and other natural, undeveloped areas (**Policy CO 1.5.5**). While these policies are intended to protect natural resources, they also limit the indirect induction of future growth."

California law requires that all land use approvals be consistent with the General Plan (Da Vita v. County of Napa (1995) 9 Cal.4th 763, 772). To be consistent, a project, considering all its aspects, must further the objectives and policies of the General Plan and not obstruct their attainment. The proposed Area Plan is a component of the County's General Plan that provides additional goals, objectives, and policies that only

apply to unincorporated areas within the Santa Clarita Valley. Accordingly, proposed future development projects will be reviewed for consistency with the proposed Area Plan's policies. Thus, it is the policies themselves (with which development projects must be consistent), among other things, that will lead to implementation of the Area Plan's goals, objectives, and policies.

Furthermore, regarding the priority of achieving infill development, Table 2.0-2 in the Revised Draft EIR (page 2.0-42 of the Project Description) indicates that approximately 55 percent of the OVOV Planning Area, which includes the City's Planning Area and the County's Planning Area, is preserved as National Forest and other Open Space lands which primarily form a perimeter boundary for restricting development. The transitional low-density rural land use designations are generally located between the urban land use designations the aforementioned Open Space lands, and these low-density rural land use designations cover approximately 25 percent of the OVOV Planning Area. The remaining 25 percent of the County Planning Area (not including the City of Santa Clarita) includes urban land use designations nearest the City and associated public services and transportation corridors. The proposed Area Plan sets a high priority for the increased densities nearest the City.

Response 14

The comment expresses and opinion that the County has a long history of making exceptions and granting Plan Amendments that permit developments in natural, undeveloped, remote, and open space land. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 15

The commenter requested additional information on how the County would enforce policies regarding ensuring that there will be no urban sprawl or substantial indirect growth impacts. Please see **Response 13** above.

Response 16

The commenter requested an explanation of how the County will jointly enforce policies affecting urban sprawl, development of natural undeveloped remote open space because both jurisdictions are proposing to adopt similar policies. Both the County and the City will each be responsible for enforcing policies within their own OVOV plan.

Although the County and City both participated in the joint OVOV planning effort, the County and the City are, and will continue to be, separate jurisdictions with separate decision-making bodies. In addition, the County will be responsible for implementing and enforcing the proposed Area Plan, including the

mitigation measures identified in the County's EIR, within its jurisdiction. The City will be responsible for implementing and enforcing its General Plan, including the mitigation measures identified in the City's EIR, within its jurisdiction. Moreover, because the two jurisdictions' documents are exceedingly similar, implementation and enforcement should be consistent across the jurisdictions. The Land Use Element of the County's proposed Area Plan includes several implementation actions that require the County to closely coordinate with the City to ensure consistent implementation and enforcement after the updated documents are adopted.

Response 17

The commenter understands that either the County or the City cannot force an entity to abide by its own policies, therefore there is a fatal flaw of the two plans which threatens to undermine accomplishment of any goals or policies within any of the goals stated in the plans. The comment raises economic, social or political issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Please see **Response 16** above.

Response 18

The commenter requested clarification as to why population numbers under the third heading on page 3.19-7 of the Revised Draft EIR do not match the numbers in Table 3.19-1.

As explained in **Response 10** above, the numbers referenced in Table 3.19-1 are SCAG population projection numbers. The numbers referenced under the third heading on page 3.19-7 include the buildout numbers for the currently adopted Area Plan and buildout numbers for the proposed Area Plan compared to SCAG population projection numbers. The numbers are not inconsistent.

Response 19

The commenter states that the population numbers under the third heading on page 3.19-7 are confusing and inconsistent with Table 3.19-1. Please see **Responses 10** and **18** above.

Response 20

The commenter states that the goals of the proposed Area Plan will not be accomplished if the County's past practices continue and the commenter recommends more restrictive processes for Plan Amendments.

The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the most recent draft of the Countywide General Plan Update, which was released for public review in April 2011 and is available on the Internet at <http://planning.lacounty.gov/generalplan>, includes proposed policies regarding criteria for Plan Amendments in the Land Use Element (e.g., Policy LU 1.2, Policy LU 1.3, Policy LU 1.4, Policy LU 1.5, Policy LU 1.6, Policy LU 1.7, and Policy LU 1.8).

Response 21

The commenter suggested a mitigation measure regarding tract map extensions should not be permitted given changes to development criteria that may be in place with a future extension. On July 15, 2011, the Governor signed AB 208, which extends, by 24 months, the expiration of any approved tentative map or vesting tentative map that has not expired as of July 15, 2011 and will expire prior to January 1, 2014. This bill will be codified as Government Code Section 66452.23. AB 208 was adopted as emergency legislation and takes effect immediately.

This extension is in addition to the earlier 1-year and 2-year extensions provided in 2008 and 2009, as well as certain other extensions under the Subdivision Map Act. As with the earlier bills, AB 208 also extends, for 24 months, any state agency approvals that pertain to a development project subject to a tentative map.

In granting these extensions, the Legislature recognized the current economic climate and the need for developers to retain development rights on their properties.

Response 22

The commenter suggested a mitigation measure regarding density bonus' for a project should only be permitted if the developer obtains for the County an equivalent density decrease on another parcel or project within a half-mile radius of the project area.

Draft EIR, Section 3.19, Population and Housing, page 3.19-5 states the following regarding density bonus' in relationship to affordable housing:

“State law (Government Code 65915) requires jurisdictions to grant incentives to promote affordable housing development, provided that a minimum number of affordable units are constructed and remain affordable for specified periods of time. In addition, state law requires that jurisdictions provide density bonuses for affordable housing production, up to a maximum of 35 percent over the units allowed by the Area Plan Land Use Map. In exchange for the additional units, the housing developer ensures that a

certain percentage of the units will be priced at affordable levels and will remain affordable over the time period required by the law. Los Angeles County complies with state requirements and provides additional incentives to promote affordable housing construction including fee waivers, reduced setbacks, increased height limits, and additional density increases.” Density bonus are allowed by State law and there would be no nexus for the County to decrease density on another property when allowing for said affordable housing density bonus. That said, Pursuant to the CEQA Guidelines Section 15126.4(3): Mitigation measures are not required for effects which are not found to be significant. While the Board of Supervisors may wish to consider the suggestion as a matter of policy is up to their discretion, however the proposed suggestion would not be appropriate as a mitigation measure to the Revised Draft EIR as it would not mitigate any significant impacts.

Response 23

The commenter suggested a mitigation measure that would allow for the approval of residential projects only if job growth in the Santa Clarita Valley planning area is accomplished to achieve the reduction in vehicle trip lengths by 1.9 miles/trip. It should be noted that the County assumes any “major new development” would require discretionary approval from the County. Given the need for discretionary approval, any “major new development” would be evaluated for consistency with the proposed Area Plan, including all applicable Goals, Objectives, and Policies Please see **Letter 85, Natural Resources Defense Council, Response 6** and **Response 7**. Also given the need for discretionary approval, any “major new development” would also be subject to project-level environmental analysis under CEQA, and would be subject to the proposed mitigation measures identified in the Revised Draft EIR (which was a program-level environmental analysis of the proposed Area Plan), as those mitigation measures would apply to all development requiring discretionary approval under the proposed Area Plan, as also explained in **Letter 85, Natural Resources Defense Council, Response 7**.

That said, pursuant to the *State CEQA Guidelines* Section 15126.4(3): Mitigation measures are not required for effects which are not found to be significant. While the Board of Supervisors may wish to consider the suggestion as a matter of policy is up to their discretion, however the proposed suggestion would not be appropriate as a mitigation measure to the Revised Draft EIR as it would not mitigate any significant impacts.

Response 24

The commenter suggested inclusion of a mitigation measure that would prohibit construction within the 500-year floodplain. We are assuming the commenter is referring to a 500-year flood zones, as opposed to floodplain. The Revised Draft EIR provides for two mitigation measures specifically addressing floodplain issues:

3.12-3 The County shall require that all structures (residential, commercial, and industrial) be flood-proofed from the 100-year storm flows. All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the Flood Insurance Rate Maps for the City of Santa Clarita, Map revised September 29, 1989), must be elevated so that the lowest floor is at or above the Base Flood Elevation in accordance with the effective Flood Insurance Rate Map.

3.12-5 Any development that is located within a Regulatory Floodway as delineated on the Flood Insurance Rate Map for the County's Planning Area must not increase base flood elevations. (Development means any man-made change improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials). A hydrologic and hydraulic analysis shall be performed prior to the start of development, and must demonstrate that the development would not cause any rise in base flood levels and additionally would not allow any rise within regulatory floodways.

The Revised Draft EIR provides for three additional mitigation measures designed to lessen hydrology impacts to less than significant. No further response is required.

OVOV

From: tsurak @dslextreme.com [tsurak@dslextreme.com]
Sent: Sunday, January 23, 2011 9:27 PM
To: ovov
Subject: LA County OVOV RDEIR

Mr. Mitch Glaser:

Thank you for the opportunity to comment of the County's RDEIR. My comments address the County's Parks and Recreation Section 3.16. It states that because the County's Planning Area already has 1,355 acres of parkland, there is no need for additional parkland in the LA County Planning Area to meet a requirement of 5 acres per 1,000 residents under buildout. This conclusion is false. First, The City of Santa Clarita OIR states "The County owns and operates 13 parks in the planning area, totaling 578 acres and serving various communities throughout the Valley." As I discuss below, even this 578 acres cited by the City is too generous. The County mistakenly assumed that Vasquez Rocks, which comprises two-thirds of the total acreage included in Table 3.16-1, qualifies as a parkland. This property is too far removed from most County residents in the area (at least 20-30 minutes away) to adequately serve the majority of the subject area. Vasquez Rocks also lacks the appropriate facilities to deserve a parkland definition as intended by the Quimby Act. In fact, the City of Santa Clarita OVOV EIR designates Vasquez Rocks not as parkland but as "reservation", which is defined as "lands set aside in order to protect scenic resources, biologic resources, geological features and/or open space, and provide only passive recreational facilities such as hiking and picnicking". The following statement in the City of Santa Clarita EIR is more appropriate for assessing whether County land should be classified as suitable parkland under both the City and County OVOV; the County should be required to re-inventory all its property identified in table 3.16-1 to properly represent the dearth of parkland which currently exists in the County planning area:

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"Some of the future park planning needs that have been identified in public surveys and meetings of Valley residents include more play fields for youth sports, sports complexes large enough to accommodate lighted fields for tournaments, more community swimming pools and water parks, and an amphitheater for outdoor concerts and theater festivals."

4

Based on the above, both the County and City are also attempting to re-define the meaning of parkland when it comes to W.S Hart Park. The vast majority of the 224.3 acres cited as parkland for W.S Hart Park, which represents one-sixth of the total acreage included in Table 3.16-1, are not available as parkland. This is corroborated by the 1991 City of Santa Clarita General Plan, which states "At that time the City owned and operated 10 parks encompassing 67.25 acres; in addition, the 15-acre William S. Hart Park, owned and operated by Los Angeles County, was located within the City limits."

5

In total, five sixths of the area claimed by the County as meeting the definition of parkland are actually ineligible for this designation. Not only does the County need additional parkland to meet planned buildout, its existing parkland is insufficient to even meet the 5 acre per 1,000 resident Area Plan requirement for current residents. Any attempt by the County to undermine the true intent of the Quimby Act to provide residents with 5 acres of useful parkland per 1,000 residents in the OVOV is reprehensible.

6

In fact, the City of Santa Clarita's EIR supports my conclusion. It states, "Due to growth pressures in County areas, particularly in and around Castaic, the need for additional playfields for youth sports has been identified as a significant park planning objective. With over 1,000 children involved in youth sports in the Castaic area, the community has only two places for sports practice: one five-acre park and the Castaic Regional Sports Complex. The County is making plans to expand facilities at the Sports Complex to include more play fields, in addition to adding an aquatic center there. Pending

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development projects in the area will also be required to provide sports fields to meet future facility needs."

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I look forward to your response.

8

Sincerely,

Thomas M. Surak
23712 Adamsboro Dr.
Newhall, CA 91321

Letter No. D83

Letter from Thomas Surak, January 23, 2011

Response 1

The comment states that Section 3.16, Parks and Recreation, of the Revised Draft EIR concludes that, because the County's Planning Area already has 1,355 acres of parkland, there is no need for additional parkland to meet a requirement of 5 acres per 1,000 residents at buildout of the proposed Area Plan, and that such a conclusion is false.

Section 3.16, Parks and Recreation, of the Revised Draft EIR explains that the current amount of parkland in the County's Planning Area is 1,355 acres (see Table 3.16-1) and the current population of the County's Planning Area is 75,000 (see pg. 3.16-20). At buildout of the proposed Area Plan, the projected population for the County's Planning Area is 237,387 residents (see pg. 3.16-20), and the total parkland for the County's Planning Area is projected to be 1,517.7 acres (1,355 of existing parkland and 162.7 acres of planned parkland, see Tables 3.16-1 and 3.16-2). The State of California's Quimby Act (Quimby Act) requires 3 acres of parkland per 1,000 residents, and the proposed Area Plan requires the County to meet a goal of 5 acres of parkland per 1,000 residents (see Policy CO 9.1.1). Accordingly, the Quimby Act would require 600 acres of parkland at buildout of the proposed Area Plan, and Policy CO 9.1.1 in the proposed Area Plan would require 1,000 acres of parkland at buildout of the proposed Area Plan. The projected 1,517.7 acres of parkland at buildout of the proposed Area Plan satisfies both requirements. The commenter seems to be expressing the opinion that some of the parkland acreage included in the parkland calculation in the Revised Draft EIR should not be included because it is ineligible for parkland designation. The commenter's opinion is noted for the record. However, all County parkland acreages used in the Revised Draft EIR were supplied by the County Department of Parks and Recreation, and were based on parkland designations set forth in the Draft Countywide General Plan.

Response 2

The commenter states that the City of Santa Clarita's (City's) Draft EIR for its proposed General Plan states that the County operates 13 parks in the planning area, totaling 578 acres, and that figure is too generous.

The 578-acre figure is cited in the proposed Area Plan (Conservation and Open Space Element, Section XI, Park and Recreation Resources and Facilities) but is not cited in the City's Draft EIR for its proposed General Plan, nor is it cited in the County's Revised Draft EIR for its proposed Area Plan. In any event, the commenter is expressing the opinion that some of the parkland acreage included in the 578-acre figure should not be included because it is ineligible for a parkland designation. The commenter's opinion is noted for the record. However, all County parkland acreages used in the Revised Draft EIR were supplied by the County Department of Parks and Recreation, and were based on parkland

designations set forth in the Draft Countywide General Plan. Moreover, because the comment does not raise an environmental issue, no further response is required.

Response 3

The commenter states that Vasquez Rocks should not qualify as parkland, as it does not meet the Quimby Act's definition of parkland. The commenter further states that Table 3.16-1 in the Revised Draft EIR should be re-inventoried to represent the lack of County parkland.

All County parkland acreages used in the Revised Draft EIR were supplied by the County of Los Angeles Department of Parks and Recreation and were based on parkland designations set forth in the Draft Countywide General Plan. The County of Los Angeles Department of Parks and Recreation submitted a comment letter regarding the Revised Draft EIR and suggested changes to Revised Draft EIR Section 3.16, Parks and Recreation. Suggested changes included clarifying that Vasquez Rocks is a "Natural Area" but still included the park in Table 3.16-1. For changes to Revised Draft EIR Section 3.16, Parks and Recreation, please see the portion of the Revised Final EIR entitled, "Revised Draft EIR Pages," for the actual text revision.

The commenter also states that language regarding Vasquez Rocks should reflect language used in the City's Draft EIR for its proposed General Plan. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 4

The commenter cites language in the proposed Area Plan (Conservation and Open Space Element, Section XI, Park and Recreation Resources and Facilities) regarding future park planning needs.

The commenter is not citing language in Revised Draft EIR Section 3.16, Parks and Recreation. In any event, the commenter seems to be expressing the opinion that some of the parkland acreage included in the parkland calculation in the Revised Draft EIR should not be included because it is ineligible for parkland designation. The commenter's opinion is noted for the record. However, all County parkland acreages used in the Revised Draft EIR were supplied by the County Department of Parks and Recreation, and were based on parkland designations set forth in the Draft Countywide General Plan.

Response 5

The commenter states that both the County and the City are attempting to redefine the meaning of parkland when applied to William S. (W.S.) Hart Park. The commenter states that one-sixth of the acreage

of W.S. Hart Park, as provided in Table 3.16-1 of the Revised Draft EIR, is not available as parkland. The commenter cites the City's General Plan, adopted in 1991, which states that the W. S. Hart Park contains 15 acres.

The City's General Plan is over 20 years old, as it was adopted in 1991, and it is being updated as a part of the "One Valley One Vision" (OVOV) joint planning effort with the County. Through the OVOV joint planning effort, the County and City were able to update information concerning many aspects of their respective planning areas, including parkland acreage. If parkland acreage had been expanded since 1991, as was the case with the W. S. Hart Park, the County and City updated that information. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 6

The commenter states that five sixths of the area claimed by the County as meeting the definition of parkland are actually ineligible for this designation. The commenter further states that the County needs additional parkland and any attempt by the County to undermine the proposed Area Plan's goal of 5 acres of parkland per 1,000 persons is reprehensible.

The commenter is expressing the opinion that some of the parkland acreage included in the parkland calculation in the Revised Draft EIR should not be included because it is ineligible for parkland designation. The commenter's opinion is noted for the record. However, all County parkland acreages used in the Revised Draft EIR were supplied by the County Department of Parks and Recreation, and were based on parkland designations set forth in the Draft Countywide General Plan. Moreover, because the comment does not raise an environmental issue, no further response is required.

Response 7

The commenter cites language within the City's Draft EIR for its proposed General Plan as support for his conclusion regarding the need for additional County parkland.

The County has been unable to locate the cited language in the City's Draft EIR for its proposed General Plan. In any event, the commenter seems to be expressing the opinion that some of the parkland acreage included in the parkland calculation in the Revised Draft EIR should not be included because it is ineligible for parkland designation. The commenter's opinion is noted for the record. However, all County parkland acreages used in the Revised Draft EIR were supplied by the County Department of Parks and Recreation, and were based on parkland designations set forth in the Draft Countywide

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

General Plan. Moreover, because the comment does not raise an environmental issue, no further response is required.

Response 8

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1/9

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January 23, 2011

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Dear Mr. Glaser:

I have the following comments and suggested mitigation measures regarding Los Angeles County's One Valley One Vision General Plan update that I would like to see incorporated in the revised EIR.

1

Proposed Additional Mitigation Measures

- **Require traffic levels to be at a "C" Level of Service.**

The County has been unable to identify what their current Level of Service standard is. There is no discussion or evaluation of why in the City of Santa Clarita the desired Level of Service is being lowered from "C" described as stable operations with average travel speeds of about 50% of free flow speeds where the ability to maneuver and change lanes in midblock locations may be more restricted than LOS B, and includes longer queues to "E" described as significant delays and average travel speeds of 33% or less of free flow speeds. An "E" Level of service is caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections and inappropriate signal timing. If stable traffic levels can not be maintained, there is too much volume for the roads and densities must be reduced accordingly.

2

- **If density increases are granted on particular projects, they must be reduced on other projects or parcels so that there is no net density gain.**

In order for this plan to work, both the City and County rely upon each other to maintain densities shown under their General Plans. In the past, General Plan amendments were granted increasing densities at will, in spite of the inconsistency with the General Plan. This mitigation measure would provide a mechanism to ensure that growth is consistent with the General Plan. In order to increase densities on a parcel, an owner would need to "buy" density rights from another landowner – much like air rights.

3

- **Condition residential growth approval on job growth in the SCV.**

There are several planning approaches that are being used to minimize impacts from growth under the plan. One of these is a 2/1 jobs/housing ratio which it is thought will reduce traffic into, out of and within the SCV. The circulation element utilizes this approach and shows a 1.9 mile reduction in average trip length which reduces impacts to roads and intersections and greenhouse gases. In order to adhere to the plan assumptions and not impact pollution, roads and highways more than planned, this job growth must take place before or as new residential units are built. To do otherwise circumvents the intent of the planning precepts.

4

- **Do not approve tract map extensions.**

There are a number of tract maps approved for developments that are inconsistent with today's planning approaches. If a developer has not seriously pursued implementing a plan that is now outdated, it should not be extended.

5

- **Change maps to reflect what can be built given mitigation policies in place.**

One of the planning goals is to preserve groundwater recharge areas. In spite of that goal, there are zoning uses and dense developments being planned that depend on stabilizing and raising stream banks in order to raise elevations and remove land from FEMA designated floodplains. These floodplains are some of the last and best water recharge areas remaining in the SCV. One is even identified as a Significant Ecological Area in the current County Plan.

6

- **Require inclusionary housing.**

One of the main reasons for the amount of traffic and congestion on SR 14 and I-5 is the imbalance between the types of jobs provided locally and the cost of housing. Most jobs in the SCV do not provide income levels that allow for workers to afford housing locally. As a result workers commute from the San Fernando Valley and Antelope Valley to jobs in the SCV and SCV residents commute to jobs in the greater Los Angeles area outside of the SCV. Approximately one half of the job growth will be in the retail and industrial areas so this mitigation measure is especially important if there is any expectation that job growth will help reduce traffic.

7

- **Require funding plans and feasibility analysis for infrastructure requirements including roads, schools, water, power, fire, library and law enforcement services.**

While it is easy to draw lines on maps for roads and postulate widening projects, it is another thing to be able to actually get them built. Ensure that the required infrastructure is feasible and economically viable given the plan. If it isn't, densities must be adjusted accordingly.

8

- **Allow unprotected left turns.** Almost all intersections have signals that only allow left turns on an arrow. This results in motorists waiting longer to turn left than they may need to, contributing to air pollution and traffic as light timing must be extended

9

to allow all the vehicles in the left turn lanes to make the action. Allowing unprotected turns will allow those turns when the intersection is clear.

9

EIR Comments

It is clear that the focus of the EIR discussion continues to be a comparison of the Current Plan against the OVOV Plan. The EIR analysis and conclusions appear to be based on this comparison rather than any analysis against the existing conditions as required under CEQA. For example, page 3.2.59 which discusses Freeway Levels of Service only contains an analysis and discussion of the OVOV Plan to the existing General Plan. There is no analysis or discussion against existing conditions. Additionally, the discussion and analysis of page 3.2.57 combines data from the existing conditions, current Plan and OVOV which confuses readers and potentially distorts results. The EIR needs to clearly discuss existing conditions versus the proposed OVOV Plan. While the EIR does in most cases provide underlying information regarding the current conditions (which is often side by side with the Current Plan and not the OVOV Plan), the analysis and discussion of impacts and mitigation efforts versus existing conditions is generally non-existent or severely lacking.

10

Circulation Element Impacts

Page 3.2-1 of the EIR concludes that "with the implementation of mitigation measures, potential traffic and circulation impacts would be less than significant." Page 3.2.-25 of the EIR identifies thresholds of significance as well as County standards for traffic increases that are "substantial". It is unclear if by themselves the impacts are deemed significant by the consultant or if they become less than significant only because of the mitigation measures. Additionally, there is no discussion or quantitative analysis regarding what sorts of improvements can actually be expected with each mitigation measure proposed. As a result, the conclusion that impacts would be "less than significant" is essentially unsupported by data.

11

An analysis of the EIR and related documents identifies several extremely significant unmitigated impacts that are contrary to this conclusion. Specifically:

- Items that would be considered significant impacts are identified on page 3.2-25 which includes "Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections" and the page also includes Los Angeles County Department of Public Works Traffic Impact Analysis Guidelines which provide ICU or V/C percentage change ratios that would be deemed substantial in relation to the existing traffic load and capacity.
 - There were 114 existing roadway segments analyzed in the EIR and Traffic Impact Analysis. Of these, 72 (which included using a 4 percent change or more on LOS A and B roads also) of the 114 (63%) had percentage changes greater than the amounts identified in the County Guidelines as a "substantial increase" and 29/114 (25%) of the total existing roads had substantial increases with final LOS's of "C" or lower.

12

- o Furthermore, there were 19 existing Principal Intersections analyzed on page 3.2-49. Every one of these intersections had ICU's that were substantially worse under the County Department of Public Works guidelines even with all of the OVOV planned roadways built. The data in Table 3.2-10 shows that the AM ICU average increases from 62.42 to 79.05 and the PM ICU increases from 68.26 to 90.56 with all planned roadways built. These increases are at least 8 times greater than the amount deemed substantial by the County.
- o Table 3.2-13 shows Level of Service for SR-14 and I-5. Levels of Service declines significantly from Existing Conditions, even with all planned improvements built. Most segments in peak flow directions decline 2 LOS grades and in non-peak directions they decline 1 LOS. All but one (5/6) of the SR-14 segments in peak directions are at "F" LOS's at peak hours. These changes are again significant and it should be noted that SR-14 is at an "F" LOS from the I-5 interchange to Agua Dulce in peak directions and hours.
- o Also, under OVOV there is a 121% increase in trip ends.

12

Even with the best case where all planned roadways are built out and improved, the simple fact is that the data demonstrates significant adverse impacts to traffic and road conditions when the "best case" is compared to existing conditions. There was no analysis of what happens to conditions if all roadways are not built. Furthermore, there is no analysis of what happens to the most critical corridor into and out of the SCV, the Newhall Pass between the I-5 and SR-14 interchange and the I-5 and I-405 interchange

13

- The Plan would result in inadequate emergency access which is an item which would be considered a significant impact as detailed on page 3.2.25. There are two hospitals serving the SCV – Henry Mayo located on McBean Parkway and Holy Cross located in Mission Hills.

14

- o Above we discussed how SR-14 is at an F level of service from Agua Dulce to the I-5 merge and how traffic south of that was not analyzed but is most likely also at an F level of service. Because of these conditions, access to Holy Cross in Mission hills will be extremely poor.

15

- o Likewise some of the most critical streets serving Henry Mayo are severely impacted under the OVOV plan, even with all OVOV roads built. This includes: McBean South of Scott (LOS F), McBean South of Valencia (LOS E), McBean North of Orchard (LOS C), Orchard Village South of McBean (LOS E), Orchard Village South of Wiley (LOS D), Lyons East of Orchard Village (LOS E), Soledad East of Bouquet (LOS D), Bouquet West of Haskell (LOS E), Bouquet East of Seco (LOS E), Bouquet South of Newhall Ranch (LOS F), and Bouquet North of Magic Mountain (LOS E).

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Because of the poor Emergency access, especially from the east side of the SCV, prompt emergency care will not be available for extended periods of the day. Furthermore, help during major emergency conditions comes from outside the SCV

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and must transit the Newhall Pass and SR-14 and/or I-5 since it is most commonly coming from the south. This help, when most needed in times of urgent need, will be unable to arrive promptly. While the mitigation measures addressing impact 3.2-5 are helpful, they do not deal with the underlying problem of the critically poor Levels of Service found on the major roadways and highways.

17

- The Plan will create hazards and barriers for pedestrians and bicyclists which is an item that would be considered a significant impact addressed on page 3.2.25.

- The Highway Plan required by OVOV eliminates 5 segments of bike lanes with no replacements shown. This severely limits the connectivity and viability of the bikeway system. Furthermore, there are significant gaps in the trail system and not all roadways with more than 10,000 vehicles per day will have striped bike lanes as desired under County standards.

18

- The width of the streets required under the plan creates hazards and barriers for both pedestrians and bicyclists. The Austin Foust report analyzes 92 roadway segments at buildout. Of those, 48 will be 6 lane roads and 11 will be eight lane roads. 6 lane roads will have at least 8 lanes at intersections because of dedicated turn lanes and 8 lane roads will have 10 lanes. So, pedestrians and bicyclists will be required to cross either 8 lanes or 10 lanes at 64% of the intersections identified in the report. The width of these intersections is at least 138'.

19

- The City bus system does not provide service to enough locations or have enough frequency to be a viable alternative to driving for most residents. For example a trip across the SCV from Canyon Country to the Valencia Industrial Center will take one hour. It takes approximately 2 hours for my daughter to take a bus from her high school to the stop nearest our house and walk home. While additional service could be provided, it would likely not be economic.

20

- It appears that for the City Plan, the desired Level of Service has changed. The County can not identify a minimum level of service in their current Plan. In the prior City General Plan, a "C" Level of Service was desired. Under the OVOV Plan, an "E" level of service is considered acceptable. [There is no analysis in the EIR, specifically the Greenhouse Gas analysis or Traffic Impact Analysis supporting or evaluating the impact of this change. Rather it is taken as a given.] An "E" Level of Service characterized as having "significant delays and average travel speeds of 33% or less of the Free Flow speed. In what is essentially a suburban area where long distances must often be travelled, having LOS's worse than "C's" is especially troublesome. Regardless of what the stated "goal" is for planning purposes, ignoring these changes and impacts versus existing conditions does not mean the changes are not significant.

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Circulation Element Mitigation Measures and Impacts

The EIR does not provide context regarding the potential effectiveness and feasibility of the mitigation measures proposed. The Santa Clarita Valley has a desert like climate

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that often discourages activities like bicycling and walking – whether because of the over 100 degree days in the summer or the potential 40 degree days in the winter or the winds in the fall. Additionally, there is more often than not considerable geographic distance between destinations such as housing, post-elementary level schools, shopping, entertainment and job centers. A Cross Valley connector was nearly completed this past year (the bridge widening over SR-14 is still pending) at a cost of \$245,000,000, taking ten years to complete. New roadways need to overcome obstacles like the Santa Clara River, train tracks and rights of way, So Cal Edison high voltage power line right of ways, the main aqueduct feeding the City of Los Angeles, currently contaminated land under DHS cleanup supervision, significant topography and seismic hazards. For example, some of the planned roads will bisect existing oil fields, contaminated properties and Santa Clarita's Central Park. These challenges add significantly to project costs and schedules and bring into question the feasibility of implementing the complete OVOV highway plan. Because of this, it is critical that a funding plan be developed as part of OVOV. When this perspective is added, these factors may make it very difficult for many of the mitigation measures to be successful.

24

Furthermore, there is no mention of the number of people who currently utilize public transit, walk or bicycle to work. While not mentioned in the report, Santa Clarita Transit reports 3.7 million trips per year (10,137 per day) and another 2,000 trips per day are taken on Metrolink. This represents an insignificant .82% (point eight two percent) of the daily trips generated in the SCV ((10,137+2,000)/1,487,994). Perhaps another .18% of the trips are accomplished on bicycles and by walking, generating a total of 1% of non-car related trips. Even if alternative form's of transit percentage usage is tripled with all the proposed mitigation measures implemented, it will make little if any appreciable reduction in the low Levels of Service being generated by OVOV. Again, there is no discussion of mitigation measure effectiveness or ineffectiveness, only the conclusion that the mitigation measures will lessen all the significant impacts to be insignificant.

25

One of the major assumptions in the plan is that area will be able to deliver on a 2/1 jobs/housing ratio going forward. The goal of having a 2/1 jobs housing balance should be lauded. However, the difficulty of achieving this goal must be addressed. There are currently between approximately 69,000 and 75,000 jobs in Santa Clarita. If population growth under this plan is 250,000 residents with 3.2 residents per household, there would be an additional 78,125 households built versus existing conditions. This translates into 156,250 new jobs – at least 208% more than today. To achieve this, job growth would need to average 2% for 37 years, 4% for 19 years or 5% for 15 years. This will most certainly be a challenge and it supports the need for inclusionary housing since half the new jobs will be in the retail and industrial sectors.

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Specific comments on the mitigation measures follow:

- **Policy C1.2.1 promotes transit oriented development.** While this is a great goal, the fact of the matter is that service on Metrolink has limited times and hours of operation and is only useful if the endpoint destination is nearby the train station on the route into Los Angeles. Try going to an evening Dodger game on the train – you can't. Furthermore, the local Santa Clarita Transit buses do not provide hours of operation that allow employees to work late or overtime hours, take an inordinate amount of time to cross the city to job centers, do not provide access to large areas of the SCV and do not provide scheduling frequency to make them truly viable as an

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alternative to an automobile. For example, taking one of the main routes connecting the eastern part of the SCV with the job centers in the western SCV takes 45 minutes to go from the end of Shadow Pines in Canyon Country to the McBean transit center in the middle of the Valley. If you then need to go to the Valencia Industrial Center (one of the main job centers), add another 10-15 minutes. This is a trip that would typically take 20 to 25 minutes in a car. Additionally, the bus frequency ranges between 30 minutes and one hour. Except on the express routes, the only people who take the bus are those who have no alternative. This coupled with the fact that less than 1% of residents use transit minimizes the effectiveness of this mitigation measure. Additionally, one greenhouse gas calculator is indicating that in a major urban area like downtown Los Angeles, 55% of employees would take public or alternative means of transit to work, but only 1% will do so if the company is located in a suburban setting (<http://www.latimes.com/business/la-fi-green-buildings-20110118,0,315057.story?page=1>).

27

- **Policy C1.2.5 promotes mixed use development.** The sad reality is that most workers in the SCV are unable to afford housing here. While a 2/1 jobs housing goal is laudable, the reality is that many of the new jobs will continue to be in low paying fields. Industrial square footage growth is 124% and retail 139% versus existing conditions. Since there is no inclusionary housing requirement, there is no assurance that mixed use developments would provide the affordable housing that is needed by the workers in those mixed use developments. This affordability problem will only continue to contribute to the stream of traffic from the SCV to outlying areas including the Antelope Valley and the San Fernando Valley. Additionally, the handful of mixed use developments will not be within walking range of the majority of existing City residents and all residents in the County portion of the Plan.

28

- **Policies C1.2.2 and C1.2.12 promote walkable, bike friendly communities.** It should be noted that there is not a map of the bikeways and proposed bikeways contained in the circulation portion of the EIR or traffic analysis. Additionally, 98 of the 114 (86%) existing roadway segments shown have more than 10,000 vehicles a day where striped bike lanes are recommended. It is not known if bike lanes can be accommodated on these streets, especially given right of way constraints and the addition of lanes and bus turnouts required under other mitigation measures and the Highway Plan. Under the OVOV plan, 233 of the 298 (78%) road segments shown will have more than 10,000 vehicles per day. Without at a minimum striped bike lanes, riding on these streets will be hazardous and not at all friendly. There is also a lack of connectivity for the existing bike lanes and paths and particularly important segments on Bouquet Canyon Road and Soledad between Lost Canyon and SR 14 will be eliminated under OVOV in order to accommodate more vehicle lanes.

29

In terms of pedestrians, 64% of the roadways will under OVOV be six lanes or greater, creating intersection widths of eight or more lanes. Crossing intersections of this width either as a pedestrian or on a bike can be daunting, especially when drivers will be impatient due to the "E" Levels of Service that is considered acceptable under OVOV. Weather, topography and geographic distance also will place a damper on the viability of these mitigation measures.

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- **Policy C2.6.1 indicates that new development will pay its' share of the costs.** It should be noted that there is no funding plan that addresses the cost of all the improvements and mitigation measures required by OVOV. These would include but

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not be limited by new roads and roadway improvements, bridges, traffic monitoring and control systems, expansion of the I-5 and SR-14, parking for public transit, subsidies for public transit, procurement of rights of way required for road widening and bus turnouts, the cost of improved transit services, bikeway development and maintenance, etc. It is unclear how a Policy can be developed and utilized in this plan without knowing what it could cost and evaluating whether that price tag is even feasible or if there are less costly alternatives that should be pursued that have better economic and traffic paybacks. Additionally this policy is undermined by Policy C2.63 which indicates that the County will work with local, regional, state and federal agencies to identify funding alternatives. Why would this be necessary if the new development is paying its share of the costs?

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• **Policies 3.1.1 to 3.1.8 are all “promote” and “encourage” based.** As a result, they do not require any actions or mitigations by potentially affected entities. Therefore, there is no assurance they will do anything to mitigate impacts.

33

• **Policies 1.3.1 and 1.3.4 involve continuing coordination with MTA and Caltrans to increase capacity and improve operations and page 3.2.61 concludes that “Adherence to the Area Plan Policies would ensure the planned improvements to the I-5 and SR-14 freeways would be implemented”.** It should be noted that the Planners, County and City of Santa Clarita do not have absolute control over entities like Caltrans and the MTA. These entities receive their marching orders from politicians that are not beholden to what OVOV says. Furthermore, given the budget crisis at all levels of government, it is especially uncertain that these improvements are guaranteed and ensured. Unless the City of SCV and the County explicitly agree to pay for these roads as part of this plan, a statement like “would ensure the planned improvements are implemented” is extremely speculative.

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• **Impact 3.2-5 discusses inadequate emergency access.** Policies C2.1.1 to C2.1.5 will do nothing to cure the shortcomings resulting from the poor Level of Service levels for routes to the hospitals. While Policy 2.2.9 will help somewhat, it won’t help if emergency vehicles are trying to come into or go out of the SCV. Policies 2.5.1 to 2.5.4 also don’t help with the Level of Service problem. Having two ways into and out of neighborhoods, good signage and visible street names will help emergency vehicles find a location but it will not help them get through LOS D, E and F streets, intersections and freeways nor speed them to the hospital.

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• **Impact 3.2-7 indicates that “Implementation of the proposed Area Plan would not conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).”** It should be noted that there are inherent conflicts in the Plan. For example, the bikeway on Bouquet Canyon, a street that carries volumes ranging between 77,000 and 32,000 cars per day will be eliminated in order to add a lane for vehicles as will a portion of the bikeway along Soledad Canyon which carries at least 17,000 cars per day. There are also a large number of streets without striped bikeways that have more than 10,000 cars per day – for example Sand Canyon between Sierra Highway which carries up to 25,000 cars per day. The Plan indicates that, striped bikeways at a minimum should be provided on streets with 10,000 or more vehicles per day. Bike lane eliminations and a lack of suitable bike lanes in the plan conflicts with Policy C.1.8. [Also, there is no needs analysis that shows major streets without striped bikeways.

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Policy C 5.1.5 indicates the bus turnouts will be located and designed to limit traffic obstruction and provide sufficient merging length. While this can be accommodated on new streets, there is no discussion in the Traffic Plan about what it will take to accomplish this, especially on streets like Soledad where the entire right of way is used for the street and sidewalk and eminent domain must be exercised to make this happen. Will the City and County really eliminate a business in order to implement this policy?

38

Policy C5.1.4 indicates a bus stop will be provided within ¼ mile of residential neighborhoods. It should be noted that some of the residential neighborhoods can extend for miles from the nearest bus stop. The closest bus stop is 3.5 miles away from the furthest house in the canyon where I live. While this policy might help in planning new developments in the City of SCV, it won't help in the County area due to the low densities and lack of bus routes serving the area. There is also a lack of connectivity with the existing bikeways and intersection widths are challenges to both pedestrians and bicyclists.

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It appears as if a laundry list of policies has been thrown against Circulation impacts - many of which have dubious financial and operational feasibility and are out of the control of the County and City of Santa Clarita. These include a rail line from Ventura to Santa Clarita, an expansion of the Palmdale airport, seamless transportation systems, the high speed Orange Line transportation, Amtrack Service (to and from where), and implementing a bus rapid transit for key transit corridors (on what right of way?).

40

Even with SR-14 at an "F" LOS, the Austin Foust traffic plan shows traffic reductions on Sierra Highway, Soledad and Placerita Canyon – roads that parallel SR-14. Today and in the future, traffic increases to LOS "F" levels when SR-14 is gridlocked. This use of alternative roadways is not shown in the Austin Foust data and as a result erroneously minimizes the impact to the community from the failing LOS on SR-14.

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In summary, I believe the OVOV Plan is deficient because of its inability to overcome one of the most visible, irritating, time wasting and pollution creating impacts from growth – terrible traffic conditions. When compared to existing conditions, the planned growth will adversely impact the entire area. I have do not see any significant parameter that is improved versus existing conditions – be it pollution, water availability and prices, traffic, impact on schools and parks, open space, groundwater impact, etc.. While OVOV is a marginal improvement over the current Plan, the current Plan is deficient from the start and any comparison to it is like comparing the absolutely worst outcome with something that is only slightly better but still a failure.

42

Please call if you have any questions or would like to discuss these points further.

43

Best regards,

Michael A. Naoum III

Letter No. D84

Letter from Michael Naoum, January 23, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The comment states that traffic levels within the unincorporated Santa Clarita Valley should be required to be at the a Level of Service (LOS) standard of “C” as in the City of Santa Clarita’s (City’s) currently adopted General Plan. The comment also states that Los Angeles County (County) does not have a defined Level of Service (LOS) standard.

According to the County’s Department of Public Works,² the proposed Area Plan or an individual development project would cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system if the proposed Area Plan or an individual development project would:

- Increase the Volume/Capacity (V/C) ratio or Intersection Capacity Utilization (ICU) by at least one percentage point (0.01) at any location where the final V/C ratio or ICU is 0.91 or greater (LOS E or F).
- Increase the V/C ratio or ICU by at least two percentage points (0.02) at any location where the final V/C ratio or ICU is between 0.81 and 0.90 (LOS D).
- Increase the V/C ratio or ICU by at least four percentage points (0.04) at any location where the final V/C ratio or ICU is between 0.71 and 0.80 (LOS C).

These standards do not require that all roadway segments and intersections operate at LOS C or better. These standards would be applied to individual development projects within the unincorporated Santa Clarita Valley. As stated in Section 3.2, Transportation and Circulation, of the Revised Draft EIR (pg. 3.2-25), “Los Angeles County does not specify an acceptable LOS for the purpose of long-range planning. However, in conformance with the Los Angeles County CMP, the maximum acceptable level of service on arterial roads (i.e., major, secondary, and limited secondary highways) within the OVOV Planning Area is LOS E.”

The comment expresses concerns about LOS E. In accordance with Policy C-2.2.4 in the proposed Area Plan, LOS E conditions are acceptable for brief periods of the day, particularly morning and evening peak hours, in order to allow for the most efficient use of the Santa Clarita Valley’s transportation network. As stated in the proposed Area Plan’s Circulation Element, “Although LOS is an important factor in transportation planning, it is not the only or even the most important criterion used in all cases.

² County of Los Angeles Department of Public Works, *County of Los Angeles Traffic Impact Analysis Report Guidelines*, (1997), p. 5 and 6.

Depending on the area being planned, other factors may be considered as having priority over expedited movement of vehicles. For example, in pedestrian-oriented commercial areas, high-speed vehicle movements could be detrimental to the desired character of development, and traffic-calming measures may be used to slow vehicle speeds. In all portions of the planning area, traffic LOS must be weighed against other community priorities such as quality of life and environmental resource protection, in order to achieve a balanced approach to transportation and land use planning.” Accordingly, providing for LOS C during all hours of the day would require much larger intersections with additional travel lanes, which would be an inefficient use of resources. In addition, such large intersections would be more difficult for pedestrians to cross.

Response 3

The comment states that if density increases are granted for particular projects in the future, they must be accompanied by density reductions on other projects or parcels so that there is no density gain and so that overall densities prescribed by the City’s proposed General Plan and the County’s proposed Area Plan are maintained.

Since the City’s General Plan and the County’s Area Plan are both long-range documents, they will need to be updated over time. This is required for a number of reasons, including community needs, project benefits, and requirements from other government entities such as the State of California. The portion of the comment suggesting that if one jurisdiction increases density, the other should reduce density represents the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the County and City are, and will continue to be, separate jurisdictions with separate decision-making bodies. Nothing in CEQA requires the County or the City to give up their respective police powers and jurisdictional authority.

Response 4

The comment requests that residential growth be approved based upon job growth in the Santa Clarita Valley. The comment also states that there are several approaches that are being used in the joint “One Valley One Vision” (OVOV) planning effort to minimize impacts from residential growth, including a 2:1 jobs/housing ratio and a reduction in average trip length. The comment concludes that in order to adhere to plan assumptions and not impact pollution, job growth must take place before new residential units are built or at the same time as new residential units are built.

The City’s proposed General Plan and the County’s proposed Area Plan, both of which were developed through the joint OVOV planning effort, include a goal of moving towards a 2:1 jobs/housing ratio within

the Santa Clarita Valley planning area, and applications for future development projects within both jurisdictions will be evaluated for consistency with the goals and policies in the City's General Plan or the County's Area Plan, depending on which jurisdiction is processing a given application. With the exception of mixed-use projects, residential growth and job growth will occur in different areas, which will make it impossible to implement the commenter's request that residential growth be approved based upon job growth.

Response 5

The comment requests that tract map extensions not be approved. The comment raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. Under existing state and local laws (such as the State Subdivision Map Act and Title 21 of the County Code), when a tentative tract map is approved, the applicant is given an initial 24 months to record a final tract map. The applicant is allowed to request three extensions, but each extension is limited to one year, for a total of three additional years (see Section 21.40.180 of the County Code). Therefore, the minimum amount of time an applicant has to record its final map is two years, and the maximum amount of time an applicant has to record its final map is five years. It should be noted there are a number of exceptions that would allow additional time to for final map recordation, including development agreements and moratoriums. Furthermore, in 2008, 2009, and 2011, the State of California gave automatic time extensions to all valid tentative tract maps.

Response 6

The comment requests that the Area Plan's proposed Land Use Policy Map be changed in order to preserve groundwater recharge areas. The comment states that while policies protect open space areas and wildlife corridors, the proposed Area Plan's land use designations give no import to those policies.

The proposed Area Plan includes a number of policies that address the issues raised by the commenter. In addition, the proposed Area Plan's Land Use Policy Map was designed in a way to address the issues identified by the commenter. For example, maximum allowable residential densities in many environmentally sensitive unincorporated areas within the Santa Clarita Valley, such as groundwater recharge areas, were reduced substantially to reduce potential impacts that could result from intense residential development, consistent with state law. Finally, it should be noted that, at the direction of the Regional Planning Commission, County staff has added an Exhibit CO-10, identifying groundwater recharge areas, as well as the following additional policies in the proposed Area Plan related to groundwater recharge and related issues:

- Policy LU 7.3.6:** Support emerging methods and technologies for the on-site capture, treatment, and infiltration of stormwater and greywater, and amend the County Code to allow these methods and technologies when they are proven to be safe and feasible.
- Policy CO 4.1.9:** Support the development of additional facilities to store or bank stormwater, particularly on lands located outside the groundwater recharge areas that are depicted on Exhibit CO-10.
- Policy CO 4.1.10:** Support emerging methods and technologies for the on-site capture, treatment, and infiltration of stormwater and greywater, and amend the County Code to allow these methods and technologies when they are proven to be safe and feasible.
- Policy CO 4.2.7:** Develop and use groundwater sources to their safe yield limits, but not to the extent that degradation of the groundwater basins occurs.
- Policy CO 4.3.8:** Protect the viability of surface water, since it provides a habitat for fish and other water-related organisms, as well as being an important environmental component for land based plants and animals.

Response 7

The comment requests that inclusionary housing be required, as the commenter's opinion is that one of the main reasons for traffic congestion is an imbalance between the types of jobs provided locally and the cost of housing.

Section 3.19, Population and Housing, of the Revised Draft EIR, page 3.19-4, discusses the Regional Housing Needs Assessment (RHNA) allocation numbers that the County is obligated to plan for. Section 3.19 further states, "State law (Government Code 65915) requires jurisdictions to grant incentives to promote affordable housing development, provided that a minimum number of affordable units are constructed and remain affordable for specified periods of time. In addition, state law requires that jurisdictions provide density bonuses for affordable housing production, up to a maximum of 35 percent over the units allowed by the Area Plan Land Use Map. In exchange for the additional units, the housing developer ensures that a certain percentage of the units will be priced at affordable levels and will remain affordable over the period required by the law. Los Angeles County complies with state requirements and provides additional incentives to promote affordable housing construction including fee waivers, reduced setbacks, increased height limits, and additional density increases" (pg. 3.19-5).

Furthermore, it should be noted that the Housing Element of the Countywide General Plan, adopted by the Board of Supervisors on August 5, 2008 and certified by the State Department of Housing and Community Development on November 6, 2008, includes an Inclusionary Housing Program as an implementation measure (please refer to Program 10, pg. 11-12). The adopted Housing Element is available on the Internet:

http://planning.lacounty.gov/assets/upl/project/housing_20090126-housing-element.pdf

The Inclusionary Housing Program in the adopted Housing Element of the Countywide General Plan is responsive to the commenter's request.

Response 8

The comment states that funding plans and feasibility analysis should be required for infrastructure improvements, including roads, schools, water, power, fire, library, and law enforcement services.

There are currently a number of funding mechanisms in place to provide for infrastructure improvements. For example, the City and County Bridge and Thoroughfare (B&T) Districts provide for funding of the arterial network described in the Circulation Elements of the City's General Plan and the County's Area Plan. All new development in B&T Districts is assessed a B&T fee based on the size of the development and the uses to be developed. The B&T fees are based on the actual costs to construct the arterial network described in the City's General Plan and the County's Area Plan. The B&T fees are collected by the County and City and then used to construct the arterial network. There are similar programs in place for libraries, law enforcement, transit, and fire. School district funding is regulated by Senate Bill 50 and Proposition 1A.

Response 9

The Los Angeles County Department of Public Works' (Public Works) left-turn phasing guidelines typically follow the provisions in the California Manual on Uniform Traffic Control Devices (CA MUTCD). Protected/Permissive phasing is typically installed at locations that have existing permissive left-turns that are experiencing left-turn delays. Any approach with an average of 40 percent or more left-turn delay cycles for one or more vehicles for any two 1-hour periods meets our guidelines for protected/permissive left-turn phasing. This threshold is slightly different from the CA MUTCD which requires 80 percent left-turn delay over a 1-hour period. Protected/Permissive left-turn phasing is usually installed only on the approaches that meet the left-turn delay threshold.

Fully Protected left-turn phasing is typically installed at locations that have five or more left-turn accidents on a single approach within a one-year period, qualify for dual left-turn lanes, or have left-turn

sight restrictions. Public Works will consider the installation of Fully Protected left-turn phasing on approaches that have the potential for left-turn accidents when a left-turning vehicle must travel three or more through lanes with high approach speeds. Fully Protected left-turn phasing is usually installed on both approaches, even if only one approach meets the guidelines for protected left-turn phasing.

Response 10

The commenter states that the Revised Draft EIR's conclusions appear to be based on a comparison of the buildout of the currently adopted Area Plan to the buildout of the proposed Area Plan rather than a comparison of the existing "on the ground" conditions to the buildout of the proposed Area Plan. The commenter specifically states that page 3.2-59 only discusses the freeway level of service at a Plan to Plan analysis only. We direct the commenter to Table 3.2-13 which discusses the Freeway Segment Level of Service at the existing condition (on the ground), Existing General Plan and Proposed Area Plan analysis. While the text in Section 3.2 Transportation and Circulation does not include a discussion to baseline conditions, the level of service impacts are based upon the "on the ground" existing condition to OVOV buildout. The comment also states that the discussion on page 3.2-57 was confusing as it mixes the existing and proposed analysis together. The purpose of the analysis was to compare the impacts of the existing plan to that of the OVOV plan. Many citizens have asked why the need for a new plan. The discussion on page 3.2-57 provides a comparison of impacts to provide the requested discussion. We urge the commenter to review page 3.2-26 and discussion regarding Trip Generation – Existing vs. OVOV Buildout, Table 3.2-9 Future Level of Service Summary-Arterial Roadways, Table 3.2-8 ADT V/C and LOS- Existing Conditions vs. OVOV Buildout Conditions (with Highway Plan Roadways) with corresponding discussion on page 3.2-28, Table 3.2-8 Future Level of Service-Arterial Roadways which includes existing Area Plan volumes compared to OVOV Area Plan volumes, and Table 3.2-10, ICU and LOS Summary for Principal Intersection-Existing Condition vs. OVOV Buildout. As is demonstrated the Area Plan analyzes baseline to OVOV Area Plan for project impacts.

Response 11

The comment states that it is unclear if traffic and circulation impacts by themselves are determined as significant by the consultant or if they become less than significant only with the implementation of mitigation measures. The comment also states that the Revised Draft EIR's conclusion that traffic and circulation impacts would be less than significant is essentially unsupported by data.

Impacts to transportation and circulation are based upon the thresholds of significance as outlined on page 3.2-25 of Section 3.2, Transportation and Circulation of the Revised Draft EIR. If the analysis determines that a significant impact would occur, mitigation measures are proposed that would mitigate the significant impact. On page 3.2-79 of Section 3.2, Transportation and Circulation of the Revised Draft

EIR, it is stated that no significant impacts would occur only with the implementation of mitigation measures.

The County disagrees with the commenter's contention that the Revised Draft EIR's conclusions regarding traffic and circulation impacts are not supported by data. The conclusions of Section 3.2, Transportation and Circulation of the Revised Draft EIR are supported by the conclusions of the Austin-Foust traffic study, which is appended to the Revised Draft EIR. Additionally, the conclusions of Section 3.2, Transportation and Circulation of the Revised Draft EIR are supported by the implementation of the policies within the proposed Area Plan, as those policies would be implemented if the Board of Supervisors adopts the proposed Area Plan.

Response 12

The comment states that, as shown in Table 3.2-10 of the Revised Draft EIR, traffic congestion at principal intersections were worse even after construction of all of the planned new roadways identified in the County's proposed Area Plan and the City's proposed General Plan, both of which were developed as part of the joint OVOV planning effort. The comment is not correct. A discussion summarizing Table 3.2-10 on page 3.2-47 of the Revised Draft EIR states: "**Table 3.2-10, ICU and LOS Summary for Principal Intersections – Existing Conditions vs. OVOV Buildout Conditions (With Highway Plan Roadways)**, identifies the LOS ratings at principal intersections in the study area under existing conditions and proposed City General Plan and County Area Highway Plans. **Table 3.2-10** shows that with the proposed Highway Plan in place, there are no intersections forecast to exceed LOS E, as is also the case for existing conditions." The comment further states that, as demonstrated in Table 3.2-13 of the Revised Draft EIR, the Level of Service declines significantly from existing conditions even with all planned improvements built. The traffic study does not concur with the commenter's conclusion, as noted on page 3.2-59 of the Revised Draft EIR:

"A summary of ADT volumes, as well as AM and PM peak hour traffic volumes, is provided in **Table 3.2-13, Freeway Segment Level of Service** for six key freeway segments within the OVOV Planning Area. The freeway LOS ratings are presented for both the existing number of lanes and the planned number of lanes described above. As shown in the table, all six freeway segments, except for the I-5 freeway south of the Parker Interchange, would operate at LOS F during both peak hours under buildout of the current or proposed County Area Plan and City General Plan if the additional freeway lanes are not added. However, with incorporation of the additional freeway lanes described above, the number of segments operating at LOS F during both peak hours would be reduced to the following three segments under buildout of the existing County Area Plan and City General Plan:

- SR-14 south of Aqua Dulce Interchange;

- SR-14 south of Sierra Highway Interchange; and
- SR-14 north of I-5 Interchange.”

Page 3.2-50 states: “As shown in **Table 3.2-11**, incorporation of the proposed Highway Plan roadway improvements would reduce the number of intersections operating at LOS F to two intersections (Intersection No. 5, The Old Road & Pico Canyon, and Intersection No. 17, Sierra Highway & Newhall) under buildout of the existing County Area Plan and City General Plan, and would eliminate LOS F ratings from all intersections under buildout of the proposed County Area Plan and City General Plan. An illustration of intersection LOS conditions based on both the proposed OVOV land uses and the existing County Area Plan and City General Plan is provided in **Figure 3.2-8**.”

The commenter also notes a 121 percent increase in trip ends attributed to buildout of the City’s proposed General Plan and the County’s proposed Area Plan. While the Revised Draft EIR notes a 121 percent increase in trip ends, actual vehicle miles traveled is reduced as noted on page 3.2-53: “**Table 3.2-12, Trip Length and VMT Comparison – Existing County Area Plan and City General Plan Buildout vs. OVOV Buildout**, provides a comparison between total ADT, VMT and trip length under buildout of the existing and proposed County Area Plan and City General Plan. The table shows that the total number of vehicle trips under buildout of the proposed County Area Plan and City General Plan is approximately 1 percent lower than those under buildout of the existing County Area Plan and City General Plan. The table also shows that total VMT is reduced by approximately 15 percent and the average trip length is reduced by approximately 1.9 miles. The amount of VMT is reduced due to the land use designations between the existing Area Plan and City General Plan and the proposed Area Plan and General Plan. As described in Section 3.1, Land Use and Planning, the proposed Area Plan would decrease by 10,224 acres of rural land, increase 9,417 acres of urban residential (includes mixed uses), and would increase by 1,897 acres of commercial and industrial land uses.”

Response 13

The commenter states that the Revised Draft EIR does not analyze the impacts that would occur if all roadways are not built. The commenter further states that there is no analysis to the Newhall Pass between the Interstate 5 (I-5) and State Route 14 (SR-14) interchange and the I-5 and Interstate 405 (I-405) interchange.

The Revised Draft EIR should only address the impacts of the proposed Area Plan. It should not speculate. Therefore, the Revised Draft EIR should not speculate as to the impacts that would occur if all roadways are not built, as those roadways are proposed as part of the proposed Area Plan. Freeway segments including the Newhall Pass area of the I-5 and SR-14 are addressed in Table 3.2-13, Freeway Segment Level of Service.

Response 14

The commenter states that the proposed Area Plan would result in inadequate emergency access to Henry Mayo Hospital in the City of Santa Clarita and Holy Cross Hospital in Mission Hills given the level of service on the I-5 and SR-14. The commenter concludes that emergency access would be considered a significant impact under the “Thresholds of Significance” on page 3.2-25 of Section 3.2, Transportation and Circulation, of the Revised Draft EIR.

The County does not agree with the commenter’s conclusion. Section 3.2, Transportation and Circulation of the Revised Draft EIR outlines goals, policies, and objectives which would minimize and reduce an emergency access impacts to less than significant, as follows:

“Emergency access would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan contains several goals, objectives, and policies intended to ensure that adequate emergency access is maintained throughout the Santa Clarita Valley. In order to promote mobility within the roadway network, the proposed Area Plan seeks to limit excessive cross traffic, access points, and turning movements on arterial highways; and enforce the appropriate spacing of traffic signals (**Policy C 2.1.1**), enhance connectivity of the roadway network through such methods as grade separations and bridges (**Policy C 2.1.2**), enhance the capacity of the roadway system by upgrading intersections when necessary (**Policy C 2.1.3**), ensure that the future dedication and acquisitions of roadways are based on projected demand (**Policy C 2.1.5**), and implement the construction of paved crossover points through medians for emergency vehicles (**Policy C 2.2.9**).

Additionally, the proposed Area Plan would facilitate consideration of the needs for emergency access in transportation planning. The County would maintain a current evacuation plan (**Policy C 2.5.1**), ensure that new development is provided with adequate emergency and/or secondary access, including two points of ingress and egress for most subdivisions (**Policy C 2.5.2**), require visible street name signage (**Policy C 2.5.3**), and provide directional signage to the I-5 and SR-14 freeways at key intersections to assist in emergency evacuation operations (**Policy C 2.5.4**.” (pg. 3.2-65)

Response 15

The commenter states that the proposed Area Plan would result in inadequate emergency access to Holy Cross Hospital in Mission Hills given the level of service on the I-5 and SR-14.

The commenter is referred to **Response 14**, above.

Response 16

The commenter states that the proposed Area Plan would result in inadequate emergency access to Henry Mayo Hospital in the City of Santa Clarita given the level of service on many major arterials serving the area where the Henry Mayo Hospital is located.

The commenter is referred to **Response 14**, above.

Response 17

The commenter states that prompt medical care would not be available for extended periods of time, especially for residents within the eastern portion of the Santa Clarita Valley. The commenter states that the mitigation measures addressing impact 3.2-5 in the Revised Draft EIR do not address the poor Levels of Service found on the major roadways and highways.

The commenter is referred to **Response 14**, above. The comment only expresses the opinions of the commenter with regard to prompt medical care not being available for extended periods of time. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 18

The commenter stated that the proposed Area Plan's Highway Plan eliminated five segments of bike lanes with no replacements shown, thereby limiting the bikeway system. The commenter further states that there are significant gaps in the trail system.

The comment raises issues to the proposed Area Plan's Circulation Element that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. With regard to the bikeway system, Exhibit C-5 in the proposed Area Plan includes the following note: "The County's bikeway plan is currently being updated and thus not reflected on this map. It will be inserted at the time the updated plan is adopted by the Board of Supervisors." More information on the County's Bicycle Master Plan currently being updated may be accessed on the Internet at <http://lacountybikeplan.com/>. Furthermore, the Circulation Element in the proposed Area Plan includes the following relevant policies:

Policy C-1.1.8: Acquire and/or reserve adequate right-of-way in transportation corridors to accommodate multiple travel modes, including bus turnouts, bus rapid transit (BRT), bikeways, walkways, and linkages to trail systems.

Policy C-2.2.6: Within residential neighborhoods, promote the design of "healthy streets" which may include reduced pavement width, shorter block length, provision of on-street parking, traffic-calming devices, bike routes and pedestrian connectivity, landscaped parkways, and canopy street trees.

- Policy C-6.1.3:** Continue to acquire or reserve right-of-way and/or easements needed to complete the bicycle circulation system as development occurs.
- Policy C-6.1.4:** Where inadequate right-of-way exists for Class 1 or 2 bikeways, provide signage for Class 3 bike routes or designate alternative routes as appropriate.
- Policy C-6.1.5:** Plan for continuous bikeways to serve major destinations, including but not limited to regional shopping areas, college campuses, public buildings, parks, and employment centers.

With regard to trails, Exhibit CO-9 in the proposed Area Plan depicts the County's Master Plan of Trails within the unincorporated Santa Clarita Valley, which reflects a significant expansion of proposed trails that was adopted by the Board of Supervisors as an amendment to the currently adopted Santa Clarita Valley Area Plan on January 16, 2007. More information on the significant expansion of proposed trails within the unincorporated Santa Clarita Valley may be accessed on the Internet at http://planning.lacounty.gov/assets/upl/official/official_20060919_hearing-scv-av.pdf. Furthermore, the Circulation Element and Conservation and Open Space Elements in the proposed Area Plan include the following relevant policies:

- Policy C-1.1.8:** Acquire and/or reserve adequate right-of-way in transportation corridors to accommodate multiple travel modes, including bus turnouts, bus rapid transit (BRT), bikeways, walkways, and linkages to trail systems.
- Policy C-7.1.10:** Continue to expand and improve the Valley's multi-use trail system to provide additional routes for pedestrian travel.
- Policy CO-9.2.1:** Plan for a continuous and unified multi-use trail network for a variety of users, to be developed with common standards, in order to unify Santa Clarita Valley communities and connect with regional and state trails such as the Pacific Crest Trail. (Guiding Principle #35)
- Policy CO-9.2.2:** Provide trail connections between paseos, bike routes, schools, parks, community services, streets and neighborhoods.
- Policy CO-9.2.4:** Ensure that new development projects provide trail connections to local and regional trail systems, where appropriate.
- Policy CO-9.2.5:** Promote the expansion of multi-use trails within rural areas of the Santa Clarita Valley.

Policy CO-10.1.7: Acquire adequate open space for recreational uses, coordinating location and type of open space with master plans for trails and parks.

In summary, the County is committed to expanding the bikeway and trails systems in the unincorporated Santa Clarita Valley, as evidenced by the Board of Supervisors' adoption of an expanded Master Plan of Trails within the unincorporated Santa Clarita Valley on January 16, 2007, by the County's current efforts to update the Bicycle Master Plan, and finally by the relevant proposed Area Plan policies cited above.

Response 19

The commenter expresses concern that the width of the streets under the proposed Area Plan's Circulation Element creates hazards and barriers for pedestrians and bicyclists.

The comment raises issues to the proposed Area Plan's Circulation Element that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. As stated in the proposed Area Plan's Circulation Element, "Roadway systems are designed with different types of streets to balance mobility and access needs in an efficient manner. The different functions of various roadways require specific methods of analysis and design, because each street type must meet different traffic capacity and access requirements. While it might be considered desirable to provide both access and mobility on all roadways, most residents would not like their local neighborhood streets to be designed to carry large volumes of through traffic. Conversely, congestion problems occur when a street designed to provide mobility is expected to provide for access as well. Local streets typically require numerous driveways to move vehicles of the street and onto adjacent properties. When too many access points are provided on a street intended for mobility, friction and conflicts occur between those vehicles needing access and other vehicles using the facility for mobility. Therefore, the designation of streets for different uses has both a functional and economic value, and must be considered in developing a viable circulation plan." Accordingly, some arterial routes have been designated as Expressways, as Major Highways, or as Secondary Highways on the Highway Plan in the proposed Area Plan's Circulation Element. These arterial routes are designed to carry large volumes of through traffic, so they may be constructed with six lanes, eight lanes, or 10 lanes of traffic, as noted by the commenter, and may be more difficult for pedestrians and bicyclists to cross when compared to local streets that are not designed to carry large volumes of through traffic.

As also stated in the proposed Area Plan's Circulation Element, "Major intersections are striped with pedestrian crosswalks, and signalized intersections have pedestrian push buttons to activate walk signals...However, crossing eight to 10 lanes of traffic on streets where speeds average 45 to 55 miles per hour can be daunting for pedestrians. Intersections can be made more pedestrian-friendly by installing traffic calming features such as striping, landscaping, and pedestrian islands." Accordingly, while the proposed Area Plan acknowledges that major arterial routes, which are designed to carry large volumes of through traffic, may be more difficult for pedestrians to cross when compared to local streets that are not designed to carry large volumes of through traffic, the proposed Area Plan acknowledges that traffic calming features can be provided to assist pedestrians, as evidenced by the following relevant policies in the proposed Area Plan's Circulation Element:

- Policy C-1.1.7:** Consider the safety and convenience of the traveling public, including pedestrians and cyclists, in design and development of all transportation systems.
- Policy C-1.1.8:** Acquire and/or reserve adequate right-of-way in transportation corridors to accommodate multiple travel modes, including bus turnouts, bus rapid transit (BRT), bikeways, walkways, and linkages to trail systems.
- Policy C-1.2.8:** Provide safe pedestrian connections across barriers, which may include but are not limited to major traffic corridors, drainage and flood control facilities, utility easements, grade separations, and walls.
- Policy C-2.2.5:** Adopt common standards for pavement width in consideration of capacity needs to serve projected travel demand, provided that a reduction in pavement width may be allowed in order to reduce traffic speeds, protect resources, enhance pedestrian mobility, or as otherwise deemed appropriate by the reviewing authority.
- Policy C-7.1.3:** Where feasible and practical, consider grade separated facilities to provide pedestrian connections across arterial streets, flood control channels, utility easements, and other barriers.
- Policy C-7.1.8:** Upgrade streets that are not pedestrian friendly due to lack of sidewalk connections, safe street crossing points, vehicle sight distance, or other design deficiencies.

Policy C-7.1.9: Promote pedestrian-oriented street design through traffic-calming measures where appropriate, which may include but are not limited to bulb-outs or chokers at intersections, raised crosswalks, refuge islands, striping, and landscaping.

In summary, the County acknowledges the commenter's concern. Accordingly, the proposed Area Plan's Circulation Element discusses the need to balance mobility and access needs, acknowledges concerns related to pedestrian crossing of major arterials, and provides relevant policies, cited above, that attempt to address these concerns.

Response 20

The commenter states that the City's bus system is not a viable alternative to driving for most residents. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 21

The commenter states that the City's proposed General Plan would lower the desired Level of Service (LOS) standard from LOS C to LOS E.

The comment is not directed to the County's proposed Area Plan, nor is it directed to the Revised Draft EIR for the County's proposed Area Plan. Therefore, no further response is required. However, the commenter is referred to **Response 2**, above, with regard to LOS standards.

Response 22

The commenter states that there is no analysis in the Revised Draft EIR that supports or evaluates the lowering of the desired LOS standard in the City's proposed General Plan.

The commenter is referred to **Response 2**, above, with regard to LOS standards.

Response 23

The commenter expresses concerns about LOS E.

The commenter is referred to **Response 2**, above, with regard to LOS standards.

Response 24

The commenter states that the proposed mitigation measures in the Revised Draft EIR do not provide context regarding their potential effectiveness and feasibility. The commenter notes that the Santa Clarita

Valley has a desert like climate that often discourages walking and bicycling. The commenter also notes that there can be a considerable geographic distance between housing, upper level schools, shopping, entertainment and job centers.

The comment that the Revised Draft EIR does not provide context regarding the potential effectiveness and feasibility of the proposed mitigation measures only expresses the opinions of the commenter. No more of a detailed response can be provided or is required, given that the comment does not identify any specific mitigation measures that, in the commenter's opinion, are not potentially effective or feasible. The comments regarding climate and the considerable geographic difference between various land uses only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also expresses concern that there will be environmental obstacles to implementing the Highway Plan within the City's proposed General Plan and County's proposed Area Plan, which were both developed as part of the OVOV joint planning effort. The commenter then states that it is critical that a funding plan be prepared so it can then be determined if mitigation measures are practical and feasible.

All future roadways identified in the Highway Plan will be required to undergo CEQA review prior to construction. The comment regarding the need for a funding plan raises issues that do not appear to relate to any physical effect on the environment, given that implementation of the Highway Plan is not listed as a mitigation measure in the Revised Draft EIR but is instead an integral part of the proposed Area Plan. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the commenter is referred to **Response 8**, above, regarding existing funding mechanisms for infrastructure improvements.

Response 25

The commenter states that there is no mention in the Revised Draft EIR of the number of people who currently utilize public transit. The commenter further states even if present day usage of alternative modes of transportation is tripled, such an increase in usage would not lead to an appreciable reduction in the LOS at buildout of the City's proposed General Plan and the County's proposed Area Plan, which were both developed as part of the OVOV joint planning effort. The commenter reiterates concerns about the effectiveness of proposed mitigation measures in the Revised Draft EIR.

While a specific number of transit ridership is not given, page 3.2-17, "Since 1997 and based on the TDP, total transit system ridership has more than doubled." The comment regarding usage of alternative

modes of transportation only expresses the opinions of the commenter. The comment regarding the effectiveness of proposed mitigation measures in the Revised Draft EIR also only expresses the opinions of the commenter and no more of a detailed response can be provided nor is required, given that the comment does not identify any specific mitigation measures that, in the commenter's opinion, are not potentially effective. Increased usage of alternative modes of transportation is not listed as a mitigation measure in the Revised Draft EIR. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the commenter is referred to **Response 18** and **Response 19**, above, regarding the bikeway system, the trail system, and the pedestrian circulation system, which provide alternative modes of transportation.

Response 26

The commenter stated that he believes that it will be difficult to achieve a 2:1 jobs/housing ratio within the Santa Clarita Valley, and that the difficulty of achieving this goal must be addressed. The commenter states this challenge supports inclusionary housing.

The Revised Draft EIR discusses the goals, objectives, and policies of the proposed Area Plan. The proposed Area Plan is a guideline for the future and cannot predict the rate of job growth or other economic factors that are outside the scope of a long-range planning document. The commenter is referred to Revised Draft EIR Sections 2.0, Project Description, and 3.1, Land Use, for a description and discussion of the proposed land use designations within the County's proposed Area Plan and the City's proposed General Plan that will serve to support a goal of 2:1 jobs housing within the Santa Clarita Valley. The commenter is also referred to **Response 4**, above, regarding job growth, housing growth, and the 2:1 jobs/housing ratio, as well as **Response 7**, above, regarding inclusionary housing.

Response 27

The commenter states that existing Metrolink service and existing Santa Clarita Transit service are not truly viable as an alternative to the automobile, which would make it difficult to implement Policy C 1.2.1 in the proposed Area Plan, which promotes transit oriented development and which the commenter refers to as a "mitigation measure."

The comment regarding existing Metrolink service and existing Santa Clarita Transit service only expresses the opinion of the commenter. The remainder of the comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment, as proposed Area Plan Policy C 1.2.1 is not listed as a mitigation measure in the Revised Draft EIR. The comment will be included as part of the record and made available to the decision makers prior to a final decision on

the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 28

The commenter notes that Policy C 1.2.5 in the proposed Area Plan promotes mixed-use development. The commenter reiterates concerns about the job/housing balance, inclusionary housing, and traffic. The commenter then states that the handful of mixed use developments will not be within walking range of existing City residents and all residents in the County portion of the plan.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. As provided in the proposed Area Plan's Land Use Element, mixed use developments, incorporating multiple family dwellings (including live-work units) and commercial uses, may be permitted in the proposed Neighborhood Commercial (CN) and Major Commercial (CM) land use designations, subject to the requirements of the underlying zoning designation. Given that proposed CN and CM land use designations are located throughout the unincorporated Santa Clarita Valley (see **Figure 3.1-2, Proposed Land Use Policy Map**, in the Revised Final EIR), mixed-use developments could be located within the unincorporated Santa Clarita Valley, subject to the requirements of the underlying zoning designation, and would therefore be within walking distance of some residents of the unincorporated Santa Clarita Valley. As stated in the proposed Area Plan's Land Use Element, "At the intermediate scale, or neighborhood level of urban form, the City's General Plan and the County's Area Plan provide opportunities in some areas to create more urban environments with mixed uses, walkable pathways, and ready access to public transit." Accordingly, the proposed Area Plan acknowledges that some areas within the Santa Clarita Valley provide opportunities to create urban environments with mixed uses, while others do not provide such opportunities. As also stated in the proposed Area Plan's Land Use Element, "In keeping with the Valley of Villages concept, each neighborhood or community within the City may define the community characteristics that are considered appropriate for that area...Within the County portion of the planning area, the design standards for Newhall Ranch are outlined in the adopted Specific Plan. The Community Standards Districts adopted by Los Angeles County will maintain desired design characteristics in Agua Dulce and Castaic." Accordingly, in keeping with the Valley of Villages concept, the proposed Area Plan acknowledges that rural areas, such as Agua Dulce and the outlying portions of Castaic, desire to maintain their rural character and their rural design standards (as set forth in the respective Community

Standards Districts for those areas), which makes them areas that do not provide opportunities to create urban environments with mixed uses. Therefore, Policy C 1.2.5 in the proposed Area Plan is not intended to promote mixed use development in all areas within the unincorporated Santa Clarita Valley. As stated in the proposed Area Plan's Introduction, "No policy, whether in written or diagram form, shall be given greater weight than any other policy in evaluating the policy intent of this Santa Clarita Valley Area Plan." Lastly, the commenter is referred to the other responses above regarding job/housing balance, inclusionary housing, and traffic.

Response 29

The comment notes that Policies C 1.2.2 and C 1.2.12 in the proposed Area Plan promote walkable, bike friendly communities. The commenter states that the Revised Draft EIR does not include a map of bikeways or proposed bikeways.

The commenter is correct in that the Revised Draft EIR does not include a map of bikeways or proposed bikeways, but such a map is not required per CEQA. The commenter is referred to Exhibit C-5 in the proposed Area Plan, which is discussed in **Response 18**, above, along with relevant policies in the proposed Area Plan.

Response 30

The commenter expresses concerns about bicycle routes, bikeways, and a lack of connectivity in some areas.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the commenter is referred to **Response 18**, above, regarding bikeways.

Response 31

The comment expresses concerns about pedestrian circulation, especially with regard to the difficulty of crossing intersections, and states that weather, topography, and geographic distance will place a damper on the viability of these mitigation measures.

The comment only expresses the opinions of the commenter with regard to the difficulty of crossing intersections due to weather, topography, and geographic distance. The commenter refers to mitigation measures, but the Revised Draft EIR does not include any mitigation measures regarding pedestrian circulation. The comment will be included as part of the record and made available to the decision

makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the commenter is referred to **Response 19**, above, regarding pedestrian circulation.

Response 32

The comment states that Policy C 2.6.1 in the proposed Area Plan would require new development to pay its share of the costs and reiterates the commenter's concern about the lack of a funding plan for infrastructure improvements, including expansion of the I-5 and the SR-14. The comment then states that Policy C 2.6.1 in the proposed Area Plan is undermined by Policy C 2.6.3 in the proposed Area Plan, as it indicates that the County will work with local, regional, state, and federal agencies to identify funding alternatives. The commenter concludes by asking why funding alternatives are necessary if new development pays its share of the costs.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. The commenter is correct in that Policy C 2.6.1 in the Proposed Area Plan states "Require that new development construct or provide its fair share of the cost of transportation improvements, and that required improvements or in-lieu contributions are in place to support the development prior to occupancy" and in that Policy C 2.6.3 in the proposed Area Plan states "Support local, regional, state and federal agencies in identifying and implementing funding alternatives for the Valley's transportation systems." However, the commenter is incorrect in that Policy C 2.6.1 is undermined by Policy C 2.6.3. As stated in the proposed Area Plan's Circulation Element, under Section VIII (Constraints and Opportunities for Improving Roadways): "Metro has the authority as the Regional Transportation Planning Agency to award regional transportation funds in Los Angeles County. Metro administers two local transportation sales tax initiatives, receiving the collected funds from the State. The primary sources of Metro funds are local sales taxes (Propositions A and C) and portions of the State and federal gasoline tax. California sales tax on motor vehicle fuel provides additional revenue. Metro provides funding directly to projects through grants of local funds, or indirectly through allocated federal or State grants. Another funding source for traffic improvements is provided by developers, who are required to provide infrastructure to support new growth as it occurs. As part of the land use entitlement and subdivision approval process, developers are required to build on-site roadway improvements and to contribute their fair share to off-site improvements. Often this fair-share contribution to off-site regional improvements is collected in the form of a traffic impact fee." Accordingly, Policies C 2.6.1 and

C 2.6.3 are compatible, as they acknowledge the different funding sources that are available for improvements to the transportation infrastructure within the Santa Clarita Valley. As stated in the proposed Area Plan's Introduction, "No policy, whether in written or diagram form, shall be given greater weight than any other policy in evaluating the policy intent of this Santa Clarita Valley Area Plan."

As also stated in the proposed Area Plan's Circulation Element, "I-5 provides an important link between the southern and northern portions of the United States, and also serves as a vital link for commuter traffic between Santa Clarita Valley communities and Los Angeles. SR-14 is also used by a significant amount of commuter traffic, as well as providing a regional link between the Los Angeles basin and the high desert communities of Palmdale and Lancaster. I-5 and SR-14 converge in the Newhall Pass, located south of the southerly planning area boundary. Newhall Pass has traditionally been one of the most congested regional corridors in Southern California and is in need of additional capacity improvements." With regard to the commenter's question as to why funding alternatives, as identified in Policy C 2.6.3 in the proposed Area Plan, will be necessary if new development pays its share of the costs, as required by Policy C 2.6.1 in the proposed Area Plan, in the case of I-5 and SR-14, the proposed Area Plan acknowledges that these routes serve areas outside of the Santa Clarita Valley. Therefore, while new development within the Santa Clarita Valley may pay its share of the costs related to improvements to the I-5 and the SR-14, it may not pay all of the costs related to such improvements, which would necessitate funding from local, regional, state, and federal agencies. The commenter is also referred to **Response 8**, above, regarding existing funding mechanisms for infrastructure improvements.

Response 33

The comment expresses concerns about Policies C 3.1.1 to C 3.1.8 in the proposed Area Plan, as they use terms such as "promote" and "encourage."

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. Policies C 3.1.1 to C 3.1.8 are listed under Objective C 3.1., which states: "Promote the use of travel demand management strategies to reduce vehicle trips." Given that the relevant Objective promotes the use of travel demand management strategies, the County is of the opinion that it is appropriate that the Policies listed under that Objective also promote and encourage the use of various travel demand management strategies, especially in light of the fact that the County is not able to mandate the use of some travel demand management strategies in all instances.

Response 34

The comment expresses concerns about Policies C 1.3.1 and C 1.3.4 in the proposed Area Plan, as they only require continuing coordination with the Los Angeles County Metropolitan Transportation Authority (MTA, or Metro) and the California Department of Transportation (Caltrans). The comment states that the County does not have authority over Metro and Caltrans and that transportation improvements in the Santa Clarita Valley will not be made unless the County explicitly agrees to pay for them in the proposed Area Plan.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. The commenter is correct in that the County does not have authority over Metro and Caltrans. As stated in the proposed Area Plan's Circulation Element, under Section VIII (Constraints and Opportunities for Improving Roadways): "Metro has the authority as the Regional Transportation Planning Agency to award regional transportation funds in Los Angeles County. Metro administers two local transportation sales tax initiatives, receiving the collected funds from the State. The primary sources of Metro funds are local sales taxes (Propositions A and C) and portions of the state and federal gasoline tax. California sales tax on motor vehicle fuel provides additional revenue. Metro provides funding directly to projects through grants of local funds, or indirectly through allocated federal or state grants." As also stated in the proposed Area Plan's Circulation Element, "Within the Santa Clarita Valley, Interstate 5 (I-5, or the Golden State Freeway) and State Route 14 (SR-14, or the Antelope Valley Freeway) are classified as freeways; both are under the jurisdiction of Caltrans for maintenance and traffic control." Given that the County does not have authority over Metro and Caltrans, Policies C 1.3.1. and C 1.3.4 in the proposed Area Plan can only require the County to coordinate with these regional entities. The commenter is referred to **Response 8**, above, regarding existing funding mechanisms for infrastructure improvements, as well as **Response 32**, above, regarding the need for funding from local, regional, state, and federal agencies, especially with regard to the I-5 and SR-14. Finally, the commenter is advised that the City and the County met with Caltrans on March 24, 2011. During this meeting, the City and the County expressed willingness to work with and support Caltrans and other agencies, such as Metro, the Southern California Association of Governments (SCAG), and the Golden State Gateway Coalition, in their efforts to respond to and mitigate regional traffic impacts. Subsequently, to reflect this willingness, County staff revised the policies under Objective C 1.3 in the proposed Area Plan's Circulation Element as follows:

Policy C-1.3.1: Continue coordinating with the Metropolitan Transportation Authority (MTA or Metro) to implement the County's Congestion Management Program (CMP) for designated CMP roadways.

- Policy C-1.3.2:** Participate in updates to the CMP and collaborate with Caltrans and Metro to revise CMP impact thresholds, ensuring that they are adequate and appropriate.
- Policy C-1.3.2-3:** Through trip reduction strategies and emphasis on multi-modal transportation options, contribute to achieving the air quality goals of the South Coast Air Quality Management District Air Quality Management Plan.
- Policy C-1.3.3-4:** Coordinate circulation planning with the Regional Transportation Plan prepared by the Southern California Association of Governments (SCAG), to ensure consistency of planned improvements with regional needs.
- Policy C-1.3.4-5:** Continue ~~coordination~~ coordinating with Caltrans on circulation and land use decisions that may affect Interstate 5, State Route 14, and State Route 126, and support programs to increase capacity and improve operations on these highways.
- Policy C-1.3.6:** Collaborate with Caltrans and Metro to implement the recommendations of the North County Combined Highways Corridor Study and support efforts by Metro to update this Study after SCAG adopts a Sustainable Communities Strategy.
- Policy C-1.3.7:** Support the Golden State Gateway Coalition in its advocacy efforts to improve the Interstate 5 corridor, recognizing that the corridor facilitates regional and international travel that impacts the Santa Clarita Valley.
- Policy C-1.3.5-8:** Ensure consistency with the County's adopted Airport Land Use Plan as it pertains to the Agua Dulce Airport, in order to mitigate aviation-related hazards and protect airport operations from encroachment by incompatible uses.
- Policy C-1.3.6-9:** Support the expansion of Palmdale Regional Airport and the extension of multi-modal travel choices between the airport and the Santa Clarita Valley, in conformance with regional planning efforts.
- Policy C-1.3.7-10:** Apply for regional, state, and federal grants for bicycle and pedestrian infrastructure projects.

Response 35

The comment reiterates concerns about adequate emergency access.

The commenter is referred to **Response 14**, above.

Response 36

The comment states that there are inherent conflicts in the proposed Area Plan, citing how bike lane eliminations and a lack of suitable bike lanes conflict with Policy C 1.1.8 in the proposed Area Plan.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. Policy C 1.1.8 in the proposed Area Plan states: "Acquire and/or reserve adequate right-of-way in transportation corridors to accommodate multiple travel modes, including bus turnouts, bus rapid transit (BRT), bikeways, walkways, and linkages to trail systems." Policy C 1.1.8 does not preclude the elimination of bike lanes. Furthermore, as explained in **Response 18**, above, Exhibit C-5 in the proposed Area Plan includes the following note: "The County's bikeway plan is currently being updated and thus not reflected on this map. It will be inserted at the time the updated plan is adopted by the Board of Supervisors." More information on the County's Bicycle Master Plan currently being updated may be accessed on the Internet at <http://lacountybikeplan.com/>.

Response 37

The comment states that there is no needs analysis in the Revised Draft EIR that shows major streets without striped bikeways.

A needs analysis is not required per CEQA. Bikeway circulation is discussed in Section 3.2, Transportation and Circulation, pages 3.2-20 and 21, which states that a Metro Bicycle Transportation Strategic Plan (Metro Bicycle Plan) was developed for the County as follows:

"The Santa Clarita Valley's interconnected network of bikeways provides residents with both recreational opportunities and options for reducing vehicle trips. Bikeways are classified into three categories based on their location and type. A Class I bikeway is an exclusive, two-way path for bicycles that is completely separated from a street or highway. Class II bike lanes are signed and striped one-way lanes on streets or highways, typically at the edge of the pavement. Bike lanes provide a demarcated space for bicyclists within the roadway right-of-way, which is especially important on streets with moderate or higher volumes and speeds. Class III bike routes share the right-of-way with vehicles; they may be signed, but are not exclusively striped for use by cyclists. Although bike routes offer little benefit to cyclists on busy roadways, they can be used to guide cyclists through the street network. On any street carrying over 10,000 vehicles per day at speeds of 30 mph or higher, striped bike lanes are recommended over bike routes. In selecting routes for bikeways that share the right-of-way with vehicles, design criteria

include connectivity, traffic volumes, speeds, curb width, intersection protection, and the number of commercial driveways.

The Metro Board adopted the Metro Bicycle Transportation Strategic Plan (Metro Bicycle Plan) in 2006 to promote bicycle use throughout the County. The Metro Bicycle Plan's vision is to make cycling a viable travel choice by promoting links between bicycle facilities and the transit network. The plan identifies four "biketranisit" hubs within the Santa Clarita Valley: the Valley's three Metrolink commuter rail stations, and the McBean Transfer Station. Another goal of the Metro Bicycle Plan was to evaluate gaps in the interjurisdictional bikeway network connecting cities and unincorporated areas to destinations and transit stops, and provide strategies for connecting bikeway links. Within the Santa Clarita Valley, four gaps in the interjurisdictional bikeway network were identified by the Metro Bicycle Plan. These gaps are:

Old Road - Within jurisdiction of the County and is located along Old Road adjacent to I-5 with a connection between Valencia, Santa Clarita and San Fernando Road Metrolink right-of-way bike path in the San Fernando Valley.

Route 126 - Within jurisdiction of the County and is connected between Santa Clarita and the Ventura County Line (portion of bikeway extends through the Newhall Ranch Specific Plan area).

Castaic/San Francisquito Creek - Within jurisdiction of the County/City and is connected between Santa Clarita and Castaic Lake along Castaic Creek, San Francisquito Creek, and I-5.

Sierra Highway - Within jurisdiction of the County/City and is connected between the Old Road and Soledad Canyon Bike Path.

Funds are available from the Bicycle Transportation Account program to help improve bicycle facilities, provided local agencies have adopted Bicycle Transportation Plans. The Master Plan for Trails within the Newhall Ranch Specific Plan shows a regional trail planned adjacent to the Santa Clara River from the eastern edge of the project to the Ventura County Line. When completed, this trail would fulfill the need for a bikeway connection between the Santa Clarita Valley and Ventura County.

Bicycle lockers are provided at all three Metrolink stations and at City Hall. Several major employers, such as Six Flags Magic Mountain and The Master's College, provide bicycle parking and changing facilities to promote bicycle support for employees."

No further response is required. That being said, the commenter is referred to **Response 18** and **Response 36**, above, regarding County bikeway planning.

Response 38

The comment expresses concerns about Policy C 5.1.5 in the proposed Area Plan and questions whether the County would eliminate a business in order to implement this policy.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. Policy C 5.1.5 in the proposed Area Plan states: "Locate and design bus turnouts to limit traffic obstruction and to provide sufficient merging length for the bus to re-enter the traffic flow." Policy C 5.1.5 does not specify where such bus turnouts must be located, nor does it specify that existing businesses be removed. Policy C 2.3.3 in the proposed Area Plan states: "When evaluating road widening projects, consider the impacts of additional traffic, noise, and fumes on adjacent land uses and use context-sensitive design techniques where appropriate." As stated in the proposed Area Plan's Introduction, "No policy, whether in written or diagram form, shall be given greater weight than any other policy in evaluating the policy intent of this Santa Clarita Valley Area Plan." Therefore, if a bus turnout is considered for inclusion as part of a road-widening project in order to implement Policy C 5.1.5, Policy C 2.3.3 requires that the impacts on adjacent uses (such as an existing business) be considered, and that context-sensitive design techniques be used, where appropriate.

Response 39

The comment expresses concerns about Policy C 5.1.4 in the proposed Area Plan and states that it will not help in County areas due to the densities and lack of bus routes serving the area. The commenter reiterates concerns about connectivity for pedestrians and cyclists.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. Policy C 5.1.4 in the proposed Area Plan states: "Provide for location of bus stops within 0.25 mile of residential neighborhoods, and include paved bus waiting areas in street improvement plans wherever appropriate and feasible." The Land Use Element in the proposed Area Plan states that the proposed Residential 2 (H2) land use designation "provides for residential neighborhoods," that the proposed Residential 5 (H5) land use designation "provides for residential neighborhoods," that the proposed Residential 18 (H18) land use designation "provides for mixed residential neighborhoods," and that the proposed Residential 30 (H30) land use designation "provides for medium to high density apartment and condominium complexes." Conversely, the Land Use Element in the proposed Area Plan states that the proposed Rural Land 20 (RL20) land use designation "identifies lands in the planning area that are distinguished by significant environmental

features and extreme development constraints,” that the proposed Rural Land 10 (RL10) land use designation “identifies lands in the planning area that include environmental features and are not appropriate for intense development requiring urban services,” that the proposed Rural Land 5 (RL5) land use designation “identifies lands in the planning area that include environmental features and are not appropriate for intense development requiring urban services,” that the proposed Rural Land 2 (RL2) land use designation “provides for the maintenance and expansion of rural communities in the planning area,” and that the proposed Rural Land 1 (RL1) land use designation “provides for the maintenance and expansion of rural communities in the planning area.”

Given that Policy C 5.1.4 states “Provide for location of bus stops within ¼-mile of residential neighborhoods” and that the Land Use Element in the proposed Area Plan states that the proposed H2, H5, H18, and H30 land use designations provide for “residential neighborhoods,” mixed residential neighborhoods,” or “medium to high density apartment and condominium complexes,” Policy C 5.1.4 would be more relevant in the proposed H2, H5, H18, and H30 land use designations. As stated in the proposed Area Plan’s Introduction, “No policy, whether in written or diagram form, shall be given greater weight than any other policy in evaluating the policy intent of this Santa Clarita Valley Area Plan.” Accordingly, Policy C 5.1.4 would be less relevant in the proposed RL20, RL10, RL5, RL2, and RL1 land use designations, as they do not provide for “residential neighborhoods” but instead identify “lands in the planning area that are distinguished by significant environmental features and extreme development constraints, identify “lands in the planning area that include environmental features and are not appropriate for intense development requiring urban services,” or provide for “the maintenance and expansion of rural communities in the planning area.”

Lastly, the commenter is referred to the other responses above regarding connectivity for pedestrians and cyclists.

Response 40

The commenter states that a number of policies are proposed for circulation impacts that neither the City nor the County has any control over.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. The proposed Area Plan’s Circulation Element includes several policies that the County cannot directly implement. The County is of the opinion that it

is appropriate for the Santa Clarita Valley Area Plan, which is a long-range planning document for the unincorporated Santa Clarita Valley that is a component of the Countywide General Plan, to include such policies. As stated in the “Background” Section of the proposed Area Plan’s Circulation Element: “The California Government Code describes conditions and data that must be researched, analyzed, and discussed in a Circulation Element. Section 65302(b) states that the General Plan shall include the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals and other local public utilities and facilities. The City and County are also required to coordinate the Circulation Element provisions with regional transportation plans, as set forth in Government Code Sections 65103(f) and 65080. Regional plans affecting the Santa Clarita Valley include those of the California Department of Transportation (Caltrans); the Regional Mobility Plan prepared by the Southern California Association of Governments (SCAG); the Los Angeles Metropolitan Transportation Authority’s (MTA or Metro) Congestion Management Program and bikeway strategic plan; Santa Clarita Transit’s Transportation Development Plan; and Los Angeles County’s Airport Land Use Plan. The Circulation Element has been developed in conformance with these regional transportation programs.” The commenter is also referred to **Response 34**, above.

Response 41

The commenter expresses concern that the SR-14 would be at LOS F conditions. The commenter also states that when the SR-14 is heavily trafficked, roads that parallel the SR-14 become impacted, and this is not reflected in the traffic study used for the Revised Draft EIR. The comment is incorrect. Sierra Highway, Soledad Canyon and Placerita Canyon are discussed numerous times in Section 3.2, Transportation and Circulation. As an example please see Table 3.2-9, Future Level of Service Summary-Arterial Roadways, and all three roadways are included in the table.

The commenter is referred to **Response 2**, above, regarding LOS standards. It should be noted that much of the traffic on the SR-14 does not originate within the Santa Clarita Valley. As stated in the proposed Area Plan’s Circulation Element, “SR-14 is also used by a significant amount of commuter traffic, as well as providing a regional link between the Los Angeles basin and the high desert communities of Palmdale and Lancaster. I-5 and SR-14 converge in the Newhall Pass, located south of the southerly planning area boundary. Newhall Pass has traditionally been one of the most congested regional corridors in Southern California and is in need of additional capacity improvements.” Accordingly, it is necessary for the County to coordinate with regional entities, as explained in **Response 34**, above.

Response 42

The commenter states that he believes the proposed Area Plan to be deficient because of its inability to overcome terrible traffic conditions. The commenter also states that planned growth will adversely

impact the entire area and he does not see any significant parameter (such as pollution, water availability and prices, traffic, impact on schools and parks, open space, groundwater impact, etc.) that is improved over existing conditions. Finally, the commenter states that the proposed Area Plan represents a marginal improvement over the currently adopted Area Plan, but the currently adopted Area Plan is deficient in his opinion and any comparison to it is comparing the absolutely worst outcome with something that is only slightly better but still a failure.

The comments only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, the comments do not raise an environmental issue within the meaning of CEQA, as they pertain to the proposed Area Plan. Therefore, no further response is required.

Response 43

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

1/12



NATURAL RESOURCES DEFENSE COUNCIL

Via Email (ovov@planning.lacounty.gov) and FedEx

January 24, 2011

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple St.
Los Angeles, CA 90012

Re: Comments on Recirculated Draft Environmental Impact Report (RDEIR) for the Santa Clarita Valley "One Valley One Vision" (OVOV) Area Plan Update Project

Dear Mr. Glaser:

On behalf of the Natural Resources Defense Council and its members and activists who live and work in Los Angeles County and the surrounding areas, we provide the following comments on the Recirculated Draft Environmental Impact Report (RDEIR) for the Santa Clarita Valley Area Plan Update.

1

While we recognize and appreciate the County's efforts in making substantive changes to the September 2009 DEIR and recirculating the revised document for review and comment, the RDEIR continues to fall short of the requirements set forth under the California Environmental Quality Act (CEQA). Despite the County's revisions, the RDEIR continues to fail to provide an adequate analysis of the Area Plan's significant effects on the environment. In our November 30, 2009 comment letter, which we attach below and incorporate by reference, we expressed our concern that the DEIR failed to analyze air emissions and greenhouse gas emissions (GHGs) according to well-established rules under CEQA regarding the proper baseline for analysis. By continuing to confuse the "no project" alternative and the CEQA baseline in a manner that minimizes the need for mitigation, the purported changes in the RDEIR have done nothing to allay our concerns that the RDEIR underestimates the full extent of project impacts and improperly rejects feasible alternatives and mitigation measures. For example, the RDEIR's Transportation and Circulation section bases its analysis and conclusions concerning transportation impacts on a comparison of the trips generated under buildout of the *current* County Area Plan and City of Santa Clarita's (City) General Plan to the number of trips that would be generated under buildout of the *proposed* County Area Plan and City General Plan. RDEIR at 3.2-26 to -27 and Table 3.2-7. According to the RDEIR: "This comparison, which is presented in Table 3.2-7, Trip

2

3

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Generation – Existing County Area Plan and City General Plan Buildout vs. OVOV Buildout, forms the basis for the analysis of project impacts in this section.” RDEIR at 3.2-27. This approach of using a baseline consisting of future, post-project approval conditions instead of current existing conditions to analyze a project’s impacts in an EIR plainly contravenes CEQA. *See, e.g., Sunnyvale West Neighborhood Ass’n v. City of Sunnyvale City Council*, No. H035135 (6th Dist., Dec. 16, 2010).

3

The RDEIR also fails to articulate a clear and precise project description. Courts have long held that “[a]n accurate, stable, and finite project description” is an essential part of an informative and legally sufficient EIR. *See, e.g., County of Inyo v. City of Los Angeles*, 71 Cal. App. 3d 185, 193 (1977). By contrast, the RDEIR’s project description is vague and riddled with incomplete and inconsistent information. For instance, it is extremely difficult to locate key statistics for the Area Plan, including those for existing and planned population growth, housing units, jobs, and associated vehicle miles traveled (VMT). This lack of organization makes it hard to find answers to even the most basic questions, such as how many acres of each type of development currently exist versus how much of each type of development would be allowed in the future under the Area Plan, and virtually impossible to understand more complex issues such as how prevailing low-density “sprawl” patterns of development will be reduced and jobs-housing balance will be achieved. This basic information about the proposed project should be clearly laid out in the Project Description section of the RDEIR, rather than scattered throughout the RDEIR and its appendices. It also is critical that the project description be consistent throughout the RDEIR to ensure that impact analyses are based on the same information. There are numerous examples in the RDEIR of inconsistent baseline information. For example, whereas the RDEIR’s Transportation and Circulation section’s analysis of project impacts as compared with existing development utilizes and cites to development data from 2004 (*see* RDEIR, Table 3.2-6), the Population and Housing section presents employment information from 2005 and baseline population and housing for 2008 (*see* RDEIR at 3.19-2).

4

CEQA also requires agencies to adopt feasible environmentally superior alternatives or feasible mitigation measures to substantially lessen or avoid otherwise significant adverse environmental impacts. Cal. Pub. Res. Code §§ 21002, 21081(a). The County has failed on both counts. With respect to alternatives, the RDEIR fails to provide adequate analysis of potential alternatives to the Area Plan. In its comment letter dated December 1, 2009, which is attached below for your reference, the Attorney General’s office opined that the DEIR improperly rejected and failed to provide a thorough analysis of the environmentally superior alternative, the Preservation Corridor Alternative. The RDEIR does not address the Attorney General’s concerns. Moreover, the RDEIR fails to include a reasonable range of feasible alternatives. For example, a primarily city-centered approach, directing all major new¹ urban development into the City’s limits and ultimately the City’s sphere of influence, to meet projected growth

5

¹ Clearly, urban development allowed by Development Agreement or other vested rights in the unincorporated County areas would proceed assuming all other permits are in place and the vesting rights do not sunset.

needs could provide superior mitigation by concentrating development in already urbanized areas. The RDEIR does not present the information or analysis necessary to determine the extent to which growth could be accommodated by fully utilizing infill areas, plus development that is allowed to occur on existing lots and in areas with vested development rights. New urban development under a city-centered alternative, while approved and implemented by the City, could be jointly planned by the City and County with fiscal agreements as appropriate to share revenues. The RDEIR did not consider or analyze any such alternative.

5

The Area Plan, along with the City's OVOV General Plan, includes an exemplary list of principles largely worded as mandatory, unlike the policies and programs that follow. The County will need to make a concerted and collaborative effort, in conjunction with the City, to add additional policies and programs to achieve those principles, which could take the form of proposed new mitigation measures as described below. For example, one of the "guiding principles" in the section entitled "Management of Growth" requires growth to occur within and on the periphery of previously developed areas, rather than as "leapfrog" development or in areas of critical environmental habitat or natural hazards. See RDEIR at 2.0-9. It is not clear how policies and programs in the Area Plan that are not worded as mandatory will achieve these and other outcomes articulated clearly in the Plan's Principles. Likewise, it is not clear how the priority for infill development will be achieved. See *id.*

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With respect to mitigation measures, the RDEIR fails to include effective measures to mitigate impacts to air pollution and GHG emissions. Many of the RDEIR's proposed mitigation measures are voluntary and unenforceable, using words like "encourage" and "promote" instead of "shall" and "require." In addition, it is our understanding that the Attorney General's office sent the County a laundry list of examples of effective mitigation measures that would stimulate infill development and reduce rural sprawl. Unfortunately, the RDEIR does not include any of them. Examples of effective, feasible mitigation measures include the following:

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- *Growth Management System.* The County should add a Goal, Policy, and/or Program requiring implementation of the County's Development Monitoring System (DMS), which was designed to inform decision-makers on an ongoing basis about changes in social, economic, or other conditions (*e.g.*, growth) that could affect the Area and General Plans. The DMS, which is part of the implementation plan for the County's General Plan² but which has never actually been carried out, would enable decision-makers to respond to change by periodically adjusting the Area and General Plans to keep them relevant to unanticipated forces and conditions. It also would help decision-makers evaluate to what extent Area and General Plan goals and objectives are being achieved and assess the effectiveness of implementation strategies and programs.

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² See County of Los Angeles General Plan, Implementation Chapter, at VIII-21 to VIII-30, available at http://planning.lacounty.gov/assets/upl/project/gp_web80-implementation-chapter.pdf.

This Policy also should require that prior to proposing any major new development project in the County unincorporated portion of the OVOV planning area, the developer would need to submit a report documenting its compliance with several criteria listed in the DMS and culled from other sources. These criteria include that the project will pay for all capital and operating costs associated with the project's demand for services and facilities; that adequate transit is in place or will be in place to serve the new development when occupied; that there is an unmet demand and land supply for the proposed housing; and that a jobs-housing match of at least 1.5 will be achieved internal to the project, taking into consideration job salaries and housing pricing.

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- Purchase of Development Rights Program.* The County should add a Goal, Policy, and/or Program calling for the adoption of a Purchase of Development Rights (PDR) program. The area targeted for the transfer or purchase of rights would be shown by overlay on the land use diagram and include all land in significant ecological areas (SEAs), as well as other areas outside the urban development areas, particularly those larger parcels not yet fully subdivided. This PDR program should be coupled with two complementary policies: (1) a new policy and program limiting new subdivisions in the transfer/purchase areas unless they have access to public sewer and water and are not environmentally sensitive (*e.g.*, within a SEA) or in high hazard zones (*e.g.* on a steep slope, in a landslide area, etc.); and (2) a new policy and program that would create a community benefits overlay on those parcels receiving "enhanced value" under the proposed Area Plan and General Plan (*e.g.*, additional density, intensity, and mix of uses). The policy concept here is that parcels receiving enhanced value would be required to provide a corresponding community benefit in the form of a fee (*e.g.*, to purchase transfer development rights [TDRs], etc.) to offset the impacts of the increased density or intensity (*see, e.g.* the City of Livermore's and Alameda County's PDR goals, policies, programs, and ordinances, and the Community Benefits Program in the City of Santa Monica's LUCE, as examples of successful efforts at policy implementation that would need to be tailored to OVOV). These policies would need to be crafted so as not to create a disincentive for desirable development outcomes (*e.g.*, high quality urban infill).
- Infill incentives.* There are numerous examples of incentives and other tools that the County could use to encourage infill development over rural sprawl. The County could waive or reduce fees for traditional traffic improvements or processing costs related to urban infill development. It could maintain an infill parcel database on the County's Web site. It could streamline permitting for infill sites in a number of ways (*see, e.g.*, the City of Sacramento's infill program; the City of Tracy's infill map and policies; the City of Los Angeles's infill policies and ordinances; City of Santa Monica's Land Use and Circulation Element (LUCE); and the City of Livermore's Downtown Specific Plan for by-right infill development). These are feasible, proven policies the County should be imposing

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right now. The incorporation of additional policies and implementing programs to facilitate urban infill would benefit the City as well.

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- Parking and congestion pricing. Finally, the County should strengthen its proposed policies and programs to increase fees for transit, require paid parking in order to change suburban behavior (e.g. parking cash-out programs with a paid parking requirement), and identify means of instituting congestion pricing in the Santa Clarita Valley. These types of programs have been demonstrated to change driving behavior.

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The Area Plan will affect an enormous geographic area and thus will have an immense and lasting impact on land use and quality of life in Los Angeles County. It commits over 70,000 acres to be developed at low densities in an area where 50% of residents commute out of the Valley for jobs. At the same time, the Area Plan does little to prevent rural sprawl in the County unincorporated areas or foster collaborative planning by the City and County to achieve a "smarter" and more compact development footprint. [The promise of jobs-housing balance and infill development as priorities are not borne out by mandatory policies and programs or effective mitigation measures.] In addition, we are extremely concerned that the County's Area Plan and City's proposed OVOV General Plan may conflict with the state of California's goals mandated by the 2006 Global Warming Solutions Act (AB 32) and 2008 Sustainable Communities and Climate Protection Act (SB 375), and that the air quality impacts from those plans would remain potentially significant even after the implementation of the mitigation measures described in the RDEIR. Without a clear-eyed assessment of existing development and growth patterns, a comprehensive examination of the Area Plan's impacts on the environment, and an honest effort at mitigating those impacts, not only is the County violating CEQA, but it is putting the health and well-being of this region's residents in jeopardy and setting back efforts to reduce VMT and their associated GHG emissions.

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The County must fix these deficiencies in the RDEIR in order to comply with CEQA. We would be glad to meet with you to discuss further our concerns and the policy examples provided above. Thank you for your consideration of these comments.

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Very truly yours,

Damon Nagami
Staff Attorney

Attachments

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NATURAL RESOURCES DEFENSE COUNCIL

November 30, 2009

Mitch Glaser
Supervising Regional Planner
County of Los Angeles
320 W. Temple Street, Room 1354
Los Angeles, CA 90012.

Re: One Valley One Vision Draft Program EIR
County of Los Angeles Area Plan

Dear Mr. Glaser:

Thank you for the opportunity to comment on the One Valley One Vision Draft Program EIR. The following comments are submitted on behalf of the Natural Resources Defense Council and its members and e-activists in Los Angeles County and neighboring counties.

I write to express concern about the failure of the DEIR to analyze air emissions and greenhouse gas emissions (GHGs) according to well-established CEQA rules concerning the proper baseline for analysis. Under CEQA Guidelines Section 15125(a), the appropriate baseline for CEQA analysis is not some hypothetical future condition, but existing physical conditions, usually at the time the Notice of Preparation is created. In *Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001), 87 Cal.App.4th 99, 125, the Court of Appeal explained:

Section 15125, subdivision (a), now provides: "An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist *at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced.* ... *This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.*" (Italics added.) Furthermore, section 15126.2 now provides as follows: "In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced." These amendments reflect and clarify a central

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concept of CEQA, widely accepted by the courts, that the significance of a project's impacts cannot be measured unless the

EIR first establishes the actual physical conditions on the property. (*County of Amador v. El Dorado County Water Agency, supra*, 76 Cal.App.4th at p. 953, 91 Cal.Rptr.2d 66; *Environmental Planning & Information Council v. County of El Dorado, supra*, 131 Cal.App.3d at p. 354, 182 Cal.Rptr. 317; *City of Carmel by-the-Sea v. Board of Supervisors, supra*, 183 Cal.App.3d 229, 227 Cal.Rptr. 899.) In other words, baseline determination is the first rather than the last step in the environmental review process.

With respect to air emissions from traffic, as well as GHG emissions, what CEQA calls for in is threefold: a calculation of what emissions are in the study area as of the date of the NOP, a calculation of what they will be at buildout, and sufficient mitigation measures to bring any increase in emissions below the level of significance. A "business as usual" scenario may define a "no project" alternative, but it is not, in general, appropriate to form a project baseline for air emissions or for GHG emissions.¹

With respect to air quality issues, the One Valley One Vision DEIR confuses the "no project" alternative and the CEQA baseline in a way that minimizes the need for mitigation, and thus subjects the DEIR and all projects approved under it to legal challenge. The DEIR compares two future buildout scenarios and looks at the difference between them to evaluate whether that difference meets the criteria for significance. See Table 3.3-12 and the associated text. The DEIR does this even though the data exists within it to analyze the increase over current conditions projected for the One Valley One Vision plan: this appears in Table 3.3-11 and results in findings of significance for all pollutants studied. Nonetheless, the DEIR uses the data in Table 3.3-12 to conclude that: "the net change in operational emissions associated with the OVOV Planning Area compared to the operational emissions associated with the existing Area Plan and General Plan would not exceed the SCAQMD thresholds, with the exception of VOC during the summer. Emissions during winter would not exceed the threshold for any measured pollutant."²

This is plain error and is not supported by substantial evidence because the wrong baseline has been chosen. Following directly from those errors and from the mistaken conclusion that emissions are below the level of significance, the DEIR fails to include mitigation measures for air emissions to mitigate the below the level

¹ The California Natural Resources Agency's recent proposed amendments to the CEQA Guidelines suggest no changes to the relevant portions of Guidelines Sections 15125 or 15126.2. See http://ceres.ca.gov/ceqa/docs/Text_of_Proposed_Changes.pdf.

² DEIR page 3.3-44.

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of significance the huge increases shown in Table 3.3-11 (figures in pounds per day, wintertime data): 33,500 pounds of VOCs, 27,800 pounds of NOX, 37,110 pounds of PM10 and 11,180 pounds of PM2.5.³

Not only has use of the wrong baseline infected the DEIR's analysis of criteria pollutants, but because traffic emissions are such a large proportion of greenhouse gas emissions, it infects the GHG analysis as well. See Tables 3.4-5, 3.4-6 and 3.4-7.⁴ Indeed the DEIR refers to its analysis of GHGs as being designed to reduce "emissions from business-as-usual conditions . . ." DEIR page 3.4-113, and proposes exactly no mitigation measures. *Id.* But, as noted above, that is not what CEQA requires – it requires an analysis of significance from current conditions, not from some pro forma "business as usual" calculation. And although the DEIR claims that "Implementation of these goals, objectives, and policies would reduce potential General Plan air quality impacts under this criterion to less than significant. . ."⁵ there is no evidence, much less the substantial evidence required under CEQA, showing that this will be so; neither is there a straightforward definition of what the threshold of significance is that the DEIR uses for GHG analysis.

Moreover, the DEIR contains no evidence to back up the assertion that keeping emissions from new development under "business as usual" will not interfere with California's emission reduction objectives. To the extent that AB32 or the AB32 Scoping Plan contain any use of a "business as usual" scenario, they speak of reducing GHG emissions 30% below "business as usual" – a standard that the One Valley One Vision DEIR does not even attempt to meet.⁶ Instead the One Valley One Vision analysis would allow over 3.9 million metric tons of new CO2 equivalent GHGs⁷ to be emitted in California every year at a time when overall GHG emissions need to be decreased.

As is the case with the air emissions analysis, use of the wrong baseline leads directly to the incorrect conclusion that no mitigation measures are necessary for the GHG impacts of the One Valley One Vision program – even though there will be huge, and demonstrable, increases in GHGs created by the project.

³ The South Coast Air Basin is in nonattainment under the Clean Air Act for ozone and PM2.5. Uncontrolled emissions of the magnitude proposed in the DEIR will set back the South Coast Air Quality Management District's efforts to bring the Basin into attainment. If attainment is not reached by the dates specified by the U.S. Environmental Protection Agency, all federal transportation money for the Basin, including for projects in the One Valley One Vision study area, may be lost.

⁴ DEIR pages 3.4-35 to 3.4-37.

⁵ DEIR page 3.4-113.

⁶ Notably, CAPCOA found that reductions of 28% to 33% from business as usual would have a "low" GHG emissions reduction effectiveness. CAPCOA, CEQA And Climate Change (2008) at p. 56.

⁷ Table 3.4-7.

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These errors need to be corrected to make the DEIR valid under CEQA, AB 32 and Executive Order S-03-05. On behalf of NRDC, I look forward to a revised and recirculated DEIR that fixes the errors noted in this letter.

Thank you for your consideration of these comments.

Yours truly,

A handwritten signature in black ink, appearing to read 'D. Pettit', written over a horizontal line.

David Pettit
Senior Attorney
Natural Resources Defense Council

10/12

EDMUND G. BROWN JR.
Attorney General

State of California
DEPARTMENT OF JUSTICE



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December 1, 2009

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
Los Angeles County
320 West Temple Street
Los Angeles, CA 90012

RE: One Valley One Vision Draft Area Plan and
Draft Environmental Impact Report

Dear Mr. Glaser:

The Attorney General provides these brief preliminary comments on the draft Environmental Impact Report (DEIR) prepared by Los Angeles County on the draft Santa Clarita Valley Area Plan (the Plan).¹ The Plan itself was developed as part of the One Valley, One Vision (OVOV) process as an amendment to the Los Angeles County General Plan. We note and appreciate that the County and the City of Santa Clarita (City) have developed and attempted to apply joint planning objectives and principles for planning in the Santa Clarita Valley.

While we believe that the County takes seriously its responsibilities to adopt a land use plan for the unincorporated portion of the Santa Clarita Valley in accordance with state law and the OVOV principles that the County and the City have developed, our review convinces us that the Plan has serious flaws. As written, the proposed Plan will not meet the mandates of the Global Warming Solutions Act of 2006 (AB 32); instead, it will result in increased greenhouse gas emissions of nearly four million metric tonnes over current levels. The Plan will also double current emissions of conventional air pollutants in the OVOV area, which is within the most polluted air basin in the country, and will result in an increase of 121% in trips driven on already very congested roads and freeways. It does not require enforceable, specific measures to contain

¹ The Attorney General submits these comments pursuant to his independent power and duty to protect the environment and natural resources of the State from pollution, impairment, or destruction, and in furtherance of the public interest. (See California Constitution, article V, section 13, Government Code sections 12511, 12600-12612, and *D'Amico v. Bd. Of Medical Examiners* (1974) 11 Cal.3d 1, 14-15.) While this letter sets forth various areas of particular concern, it is not intended, and should not be construed, as an exhaustive discussion of the DEIR's compliance with the California Environmental Quality Act.

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the urban form, prevent further sprawl, or adequately preserve natural and biological resources. It also fails as an informative document, in that it is confusing and internally contradictory in several places, and it is very difficult to determine such basic facts as the number of additional housing units expected to result from the proposed Plan.

We believe that the DEIR for the proposed Plan does not comply with the requirements of the California Environmental Quality Act (CEQA). We are providing you with a short description of our principal areas of concern regarding the DEIR now, in the hopes that it may be of help to the County in the EIR process. As we understand from our discussions that this is an iterative process, we may wish to submit additional comments at a later time in the EIR process, if circumstances warrant.

Our review to date indicates that the DEIR fails as an informational document, in that it fails to apprise the decision makers and the public of the full range and intensity of the adverse effects on the environment that may reasonably be expected if the Plan is adopted and carried out. It compares the environmental impacts of the proposed Plan to the impacts that are expected if the existing Los Angeles County Area Plan for the Santa Clarita Valley is fully built out, instead of comparing the impacts from the proposed plan to the existing, on-the-ground conditions CEQA requires. (14 Cal. Code of Regs. § 15125(a); *County of Amador v. El Dorado Water Agency* (1999) 76 Cal.App.4th 931, 955.) The failure to evaluate the impacts of the proposed Plan as measured against existing conditions, not hypothetical future conditions, results in the DEIR finding the proposed Plan would have no significant impact on climate change (despite adding almost four million metric tonnes of greenhouse gases to the atmosphere), on air quality (despite doubling existing pollutant emissions into an air basin that already is the most polluted in the nation), on transportation (despite increasing average daily trips by about 120%), and other areas. We believe that these findings are not supported by substantial evidence, and that they render the DEIR legally inadequate. We note also that an inadequate EIR can not be used as a program EIR from which EIRs for future development projects may be tiered.

We also believe that the findings of non-significance for so many impact areas renders the DEIR deficient as a substantive document, in that it fails to recommend and analyze the effectiveness of all feasible measures to mitigate adverse environmental effects as required by CEQA (Pub. Res. Code §§ 21002, 21081(a); *County of San Diego v. Grossmont-Cuyamaca Community College Dist.* (2006) 141 Cal.App.4th 86, 98), particularly the impacts on climate change and air quality. Mitigation measures that are proposed tend to be voluntary and unenforceable, merely requiring that mitigation be “encouraged” or “promoted”, and not required. A very few examples of such measures are Policies C 2.2.7, LU 5.2.5, C 1.2.5, LU 2.3.2, LU 5.2.5, C 1.1.1.6, and C 1.1.1.12, C 1.2.2, C 1.2.9, LU 2.1.2, LU 2.3.2, LU 3.2.2, LU 5.2.2, and LU 5.2.3. Many others could be cited.

In addition, the DEIR does not adequately analyze alternatives to the proposed Plan, as CEQA requires. (Cal. Code of Regs., tit. 14, § 15126.6(a).) The Preservation Corridor Alternative, identified by the DEIR as the environmentally superior alternative, is dismissed, but is not shown to be infeasible. The DEIR rejects it primarily on grounds that it would not meet all of the 36 joint planning principles underlying the joint OVOV planning process as well as the

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proposed project would. (DEIR, p. 6.0-44.) We note that the DEIR identifies only three of these principles as to which this alternative is “less effective” than the proposed Plan. (*Id.*) We believe that CEQA requires a fuller consideration of the environmentally superior alternative, and substantial evidence supporting its rejection, given that alternatives must be fully considered “even if these alternatives would impede to some degree the attainment of the project objectives.” (Cal. Code of Regs., tit. 14, § 15126.6.)

Further, the cumulative impacts of the proposed OVOV Plan, taken together with the impacts that will result from development and growth in the remainder of the North County subregion, particularly the Antelope Valley, are barely explored at all. The DEIR states that about 59% of the projected growth for the North Los Angeles County subregion will take place in the Antelope Valley (DEIR, pp. 3.19-6, 3.3-39), but it fails to analyze what the effects of that growth may be on, e.g., air quality or greenhouse gas emissions, when considered cumulatively with the growth expected from the Santa Clarita proposed Plan. The DEIR takes the position that if an impact is not “significant”, it cannot contribute to cumulative impacts. This contravenes CEQA’s requirements and is at odds with one of the central rationales for cumulative impact analysis, namely that impacts that may not be significant in and of themselves may add up to significance if examined cumulatively. (*Los Angeles Unified School District v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025.) We believe that a cumulative impacts analysis is required for climate change, air quality, transportation, and land use, at the least.

These are the major areas of concern we have with the DEIR at this stage of our review; we hope that this is of assistance to you and to the Planning Commission. As you know, we have had a preliminary discussion of the document with the Regional Planning staff, and hope to continue that dialogue. To discuss this matter further, please contact the undersigned.

Sincerely,

/s/

SUSAN L. DURBIN
Deputy Attorney General

For EDMUND G. BROWN JR.
Attorney General

Letter No. D85

Letter from Natural Resources Defense Council, January 24, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The comment is an introduction to comments that follow and does not raise a specific environmental issue within the meaning of CEQA. No further response can be made or is required. The comment, however, will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 3

Citing Section 3.2, Transportation and Circulation (and specifically Table 3.2-12, Trip Length and VMT Comparison - Existing County Area Plan and City General Plan Buildout vs. OVOV Buildout), the comment states that the Revised Draft EIR improperly compares project impacts to buildout under the currently adopted City General Plan and the currently adopted Area Plan, as the Revised Draft EIR should compare project impacts to existing “on the ground” (baseline) environmental conditions

While Table 3.2-12 does compare average daily traffic (ADT), total vehicle miles traveled (VMT), and average trip length under buildout of the currently adopted Area Plan to ADT, VMT, and average trip length under buildout of the proposed Area Plan, this analysis was provided for informational purposes only and is not relevant for purposes of assessing the proposed Area Plan’s impacts under the thresholds of significance set forth on page 3.2-25 of the Revised Draft EIR. While this “Plan to Plan” analysis is not required by CEQA, it is also not prohibited. The information is, among other things, relevant from a planning perspective.

Furthermore, and critically, all impacts were also assessed by comparing the proposed Area Plan to existing “on the ground” (baseline) environmental conditions, consistent with the comment’s request. As to traffic, the Revised Draft EIR compares trip generation under existing baseline conditions to conditions under buildout of the proposed Area Plan, beginning on page 3.2-26 of the Revised Draft EIR. Table 3.2-6 compares trips generated by existing (2004)³ land uses to trips generated by future (buildout) land uses in the Santa Clarita Valley based on six generalized land use categories. As shown in the table, buildout of the land uses allowed by the City’s proposed General Plan and the County’s proposed Area Plan (which were both developed through the joint “One Valley One Vision” (OVOV) planning effort) would result in

³ One Valley One Vision Valley-Wide Traffic Study, Austin-Foust Associates, June 2010, 2-19.

an approximately 121 percent increase in valley-wide trip ends⁴ over existing trip ends. A comparison of traffic forecasts based on the proposed Area Plan (the proposed land uses along with the proposed highway network) to existing conditions is also provided in Table 3.2-8. Also, Table 3.2-10, ICU and LOS Summary for principal Intersections—Existing Conditions vs. OVOV Buildout Conditions (With Highway Plan Roadways), identifies the LOS ratings at principal intersections in the study area under existing conditions and under conditions at buildout of the City’s proposed General Plan and the County’s proposed Area Plan, which includes buildout of the Highway Plan identified in both Plans as well as buildout of the land uses identified in both Plans.

Thus, all of “on the ground” (baseline) to project analysis was conducted and analyzed to address the thresholds of significance within Section 3.2, Transportation and Circulation, consistent with the Sunnyvale decision.

Finally, all other sections of the Revised Draft EIR also conduct similar “on the ground” (baseline) to Plan analysis as appropriate.

The commenter also attaches, and incorporates by reference, its November 20, 2009 comment letter. Revised Draft EIR Section 1.0, Introduction, page 1.0-10 discusses the previously released EIR and comments received regarding that EIR: “In September 2009, the County released a Draft Area Plan and Draft Environmental Impact Report (EIR). Comments received on the Draft EIR, concerning Air Quality, Traffic and Circulation, Global Climate Change, and Water Supply required a reexamination of the Draft EIR data. As a result of this examination, the County determined that a recirculation of the Draft EIR would be required. While substantive changes have only been made to the Air Quality, Traffic and Circulation Global Climate Change, and Water sections, the County has determined that the entire Draft EIR will be recirculated for review and comment. Since the County is recirculating the entire Draft EIR, the County will require reviewers to submit new comments and will not respond to previous comments received during the first circulation period, even if those comments pertain to a portion of the EIR that has not been substantively changed. Although previous comments are part of the administrative record, the previous comments do not require a written response in the Revised Final EIR. The County need only respond to those comments submitted in response to the recirculated Draft EIR, except that the County cannot fail to respond to pertinent comments on significant environmental issues.”

⁴ Trip ends are daily trip ends where one trip is equal to two trip ends. One Valley One Vision Valley-Wide Traffic Study, Austin-Foust Associates, June 2010, 2-18.

Response 4

The comment states that the Revised Draft EIR fails to “articulate a clear and precise project description.” The comment further states that it is difficult to find key statistics for the proposed Area Plan and that this information should not be scattered throughout the document. The comment also complains that there is “inconsistent baseline information” in the Revised Draft EIR, stating that the traffic analysis relied on data from 2004 while Section 3.19, Population and Housing, in the Revised Draft EIR uses data both from 2005 and 2008.

First, the County does not concur that basic information about the project cannot be found within Section 2.0, Project Description. Section 2.0 includes the following tables, which provide a general overview of the statistics associated with the project:

- Table 2.0-1, Summary of Population, Housing, and Employment Projections for the OVOV Planning Area at Buildout
- Table 2.0-2, Acres of Land Use Designations

Furthermore, the *State CEQA Guidelines* are clear that the project description does not need to provide extensive detail beyond that needed for review and evaluation of environmental impacts as outlined below:

“[*State CEQA Guidelines*] Section 15124. Project Description.

The description of the project shall contain the following information but should not supply extensive detail beyond that needed for evaluation and review of the environmental impact.

- (a) The precise location and boundaries of the proposed project shall be shown on a detailed map, preferably topographic. The location of the project shall also appear on a regional map.
- (b) A statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project.
- (c) A general description of the project’s technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities.
- (d) A statement briefly describing the intended uses of the EIR.

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

- (1) This statement shall include, to the extent that the information is known to the Lead Agency,
 - (A) A list of the agencies that are expected to use the EIR in their decision making, and
 - (B) A list of permits and other approvals required to implement the project.
 - (C) A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies. To the fullest extent possible, the lead agency should integrate CEQA review with these related environmental review and consultation requirements.
- (2) If a public agency must make more than one decision on a project, all its decisions subject to CEQA should be listed, preferably in the order in which they will occur. On request, the Office of Planning and Research will provide assistance in identifying state permits for a project."

With respect to the proposed Area Plan, generally, as indicated in Section 2.0, Project Description, pages 2.0-2 and 3, the project description provides the following:

- A discussion of location and regional setting of the One Valley One Vision (OVOV) Planning Area;
- A discussion of environmental review and consultation requirements and how the Area Plan EIR is to be used by the County;
- Purpose of the Area Plan EIR;
- Approvals and Actions to Implement the Area Plan;
- Purpose of the Area Plan and the 36 Guiding Principles, which guide the development of the Santa Clarita Valley;
- An overview of the existing communities and approved Specific Plans;
- A summary of the analysis assumptions and methodology used in preparing the Area Plan;
- A discussion of Land Use Element and Map of the Area Plan; and
- Policies within each of the above mentioned Elements.

In sum, review of Section 2.0 of the Revised Draft EIR concludes that the section meets all of the requirements of Section 15124 of the *State CEQA Guidelines*.

As to the comment's complaint about allegedly using "inconsistent baseline information," the Revised Draft EIR uses the most appropriate information for the specific area of analysis being considered. The commenter cites the 2004 Santa Clarita Valley traffic model as an example and then notes that data from different years was used for housing. First, the title of the 2004 traffic model is misleading because the

traffic model is updated with every submitted project application in the Santa Clarita Valley. As noted in footnote 3 on page 3.2-26 of the Revised Draft EIR:

“The SCVCTM, originally developed in 1994, was substantially updated in 2004 with subsequent refinements. See **Appendix 3.2** for a more detailed discussion of the updates to this model and the version used in this traffic analysis.”

Also, because the baseline information for analyses of various environmental topics may be from different years, it does not mean that baseline information is not consistent. The various sections of the Revised Draft EIR use the most up to date data available and therefore the most appropriate baseline information available. It would be misleading for the Revised Draft EIR to use data available only from the same year for every subject matter analyses when more recent data is available for other subject matter areas. In short, the Revised Draft EIR merely addresses different environmental topical areas with the most recent and relevant information available.

Response 5

The comment states that the Revised Draft EIR improperly rejected the environmentally superior alternative (i.e., Alternative 2 - Preservation Corridor Alternative), failed to adequately explain why that alternative is inconsistent with the proposed Area Plan’s objective of achieving a mix of land uses, and failed to consider a reasonable range of alternatives, including a “city-centered alternative that maximizes infill opportunities and avoids sprawl development at the urban fringe” and suggests some sort of revenue sharing agreement to facilitate the latter.

Regarding the environmentally superior alternative, as explained in the Revised Draft EIR, Alternative 2 is superior to the proposed Area Plan from an environmental perspective. (Revised Draft EIR, p. 6.0-44.) However, Section 6.0 further found that Alternative 2 does not satisfy all of the project objectives. (Revised Draft EIR, p. 6.0-44.) “For example, because this alternative would result in a reduced population and a decrease in the number of housing units, it would be less effective at achieving goals 14, 17, and 29 when compared to the proposed [Area Plan].” (Revised Draft EIR, p. 6.0-44.) Therefore, contrary to the comment, the Revised Draft EIR provided an adequate basis for preliminarily rejecting Alternative 2 from further consideration.

For background purposes, Alternative 2 would result in less buildable area than the proposed Area Plan: “[A] total of 597 dwelling units would be allowed on the 5,967.5 acres within the boundary of the proposed Preservation Corridor under Alternative 2, instead of a total of 2,761 dwelling units under the proposed Area Plan.” (Revised Draft EIR, p. 6.0-21.) In other words, Alternative 2 would provide 2,164 fewer dwelling units than the proposed Area Plan and accommodate 7,055 less residents than the proposed Area Plan. (Revised Draft EIR, p. 6.0-31.) This difference is not inconsequential given the

County's need to accommodate long-term growth projections within its jurisdictional areas. Please see **Letter E11, Response 15** for a discussion regarding long-term population projections and the Southern California Association of Governments (SCAG).

As indicated above, this overall reduction in total dwelling units and resident population is inconsistent with the following objectives of the proposed Area Plan:

14. Valley communities shall contain a mix of uses that support the basic needs of residents—places to live, shop, recreate, meet/socialize, and enjoy the environmental setting—that are appropriate and consistent with their community character. Regionally oriented uses that serve residents of the entire Valley or export goods and services may be concentrated in key business centers rather than uniformly dispersed throughout the Valley communities.
17. The Valley is committed to providing affordable work force housing to meet the needs of individuals employed in the Santa Clarita Valley.
29. Public infrastructure shall be improved, maintained, and expanded as needed to meet the needs of projected population and employment growth and contribute to the Valley's quality of life.

(Revised Draft EIR, pp. 2.0-10 to -12.)

With respect to the comment regarding reviewing a reasonable range of alternatives and requesting that the County consider a "city-centered alternative," the County considered a reasonable range consistent with *State CEQA Guidelines* Section 15126.6(a). Section 6.0, Alternatives, of the Revised Draft EIR considered a reasonable range of three alternatives that were specifically devised in light of the proposed Area Plan's identified significant and unavoidable impacts. (See Revised Draft EIR, p. 6.0-2; see also pp. 6.0-7 to 6.0-8 [describing Alternative 1 - No Project/Existing SCV Area Plan]; p. 6.0-21 [describing Alternative 2 - Preservation Corridor Alternative]; and p. 6.0-32 [describing Alternative 3 - Transit Corridor/Increased Employment Opportunity Alternative].)

As for the comment's request to consider a "city-centered alternative," it is important to emphasize that the proposed Area Plan, for purposes of the County, is defined by the County's (not the City's) jurisdictional areas. That is, the County's Board of Supervisors will consider whether to adopt land use designations and policies, contained in the proposed Area Plan, for the County's jurisdictional areas. The County cannot consider the alternative recommended by the comment because the County has no regulatory purview over the geographic area required for implementation of such an alternative. Relatedly, the County cannot dictate land uses within the City of Santa Clarita.

As stated in Section 6.0:

“When addressing feasibility, the *State CEQA Guidelines* Section 15126.6 states that “[a]mong the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and *whether the applicant can reasonably acquire, control or otherwise have access to the alternative site* (or the site is already owned by the proponent).” (Italics added).

As indicated above, the regulatory limitations in this case are the defined jurisdictional boundaries of the City and County. Further, *State CEQA Guidelines* Section 15126(f)(3) states that an EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. Here, for the County to aspire to assume land use jurisdiction from another agency (i.e., the City) is remote and speculative. Nothing in CEQA requires the County or the City to give up their respective police powers and jurisdictional authority. Moreover, to the extent that the commenter’s proposed alternative would wholly or more severely restrict any further development in the areas of the County’s jurisdiction and redirect that development to within the City, questions arise under the Fifth Amendment to the U.S. Constitution and Article 1, Section 19 of the California Constitution, thereby raising further doubts about the feasibility of any such alternative.

Finally, with respect to the comment’s reference to revenue sharing agreements, such agreements are negotiated and executed when land is annexed from the County by the City. The County reasonably expects that such agreements would continue to be utilized in the future as additional annexations are processed.

Response 6

The comment states that it is not clear how “exemplary” principles of the proposed Area Plan, such as avoiding “leapfrog” development or encouraging infill development, will be achieved.

California law requires that all land use approvals be consistent with the General Plan (*Da Vita v. County of Napa* (1995) 9 Cal.4th 763, 772). To be consistent, a project, considering all its aspects, must further the objectives and policies of the General Plan and not obstruct their attainment. The proposed Area Plan is a component of the County’s General Plan that provides additional goals, objectives, and policies that only apply to unincorporated areas within the Santa Clarita Valley. Accordingly, proposed future development projects will be reviewed for consistency with the proposed Area Plan’s “exemplary” policies, including those listed below. Thus, it is the policies themselves (with which development projects must be consistent), among other things, that will lead to implementation of the Area Plan’s goals, objectives, and policies.

Moreover, the comment correctly observes that nearly all of the proposed Area Plan's Guiding Principles are worded in mandatory language, reflecting the high priority the proposed Area Plan is designed to give to the overarching principles that guide policies in the proposed Area Plan and specific future implementing ordinances and development proposals. The County disagrees that all policies following the principles do not have mandatory language. A very large and significant number of the proposed Area Plan policies include mandatory language, whereas a number of policies intentionally do not have mandatory language, because some policies may not be appropriate or feasible in all instances, given the great diversity of communities (both urban and rural) and development types within the unincorporated Santa Clarita Valley. The proposed Area Plan's guiding principles provide guiding directives for numerous policies within each Element of the proposed Area Plan. The policies within each Element are worded to mandate or provide direction to the specific implementing ordinances or to provide detailed requirements applicable to individual development proposals. The proposed Area Plan policies are balanced between mandating critical imperatives and providing guidance for areas requiring flexibility at the level of an Area Plan for a large and diverse planning area like the unincorporated Santa Clarita Valley.

Representative policies related to discouraging leapfrog development and promoting infill development, included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

- Policy LU 1.1.2:** On the Land Use Map, concentrate urban development within flatter portions of the Santa Clarita Valley floor in areas with limited environmental constraints and served with infrastructure.
- Policy LU 1.1.3:** Discourage urban sprawl into rural areas by limiting non-contiguous, "leap-frog" development outside of areas designated for urban use.
- Policy LU 1.1.5:** Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.
- Policy LU 1.2.13:** Encourage use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses, access to public transit, and opportunities for living and working within the same community.

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- Policy LU 2.1.2:** On the Land Use Map, integrate land use designations in a manner that promotes healthy, walkable communities, by providing an appropriate mix of residential and service uses in proximity to one another.
- Policy LU 2.3.2:** Either vertical or horizontal integration of uses shall be allowed in a mixed use development, with an emphasis on tying together the uses with appropriate pedestrian linkages.
- Policy LU 2.3.5:** Mixed use developments shall be designed to create a pedestrian-scale environment through appropriate street and sidewalk widths, block lengths, relationship of buildings to streets, and use of public spaces.
- Policy LU 3.1.3:** Promote opportunities for live-work units to accommodate residents with home-based businesses.
- Policy LU 3.1.7:** Promote development of housing for students attending local colleges, in consideration of access to campuses to the extent practicable.
- Policy LU 3.2.1:** Require provision of adequate walkways in urban residential neighborhoods that provide safe and accessible connections to destinations such as schools, parks, and neighborhood commercial centers.
- Policy LU 3.2.2:** In planning residential neighborhoods, include pedestrian linkages, landscaped parkways with sidewalks, and separated trails for pedestrians and bicycles, where appropriate and feasible.
- Policy LU 4.3.5:** Support efforts by the City of Santa Clarita to coordinate with property owners and environmental agencies, and provide assistance as appropriate, to promote clean-up and redevelopment of the Whittaker Bermite property as a business and employment center.
- Policy LU 5.2.1:** Designate higher-density residential uses in areas served by public transit and a full range of support services.
- Policy C 1.2.6:** Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.
- Policy C 4.1.6:** Provide incentives to promote transit-oriented development near rail stations.

Policy C 5.4.1: Establish transit impact fee rates that are based on the actual impacts of new development on the transit system, and regularly monitor and adjust these fees as needed to ensure adequate mitigation.

Policy C 5.4.2: Evaluate the feasibility of establishing a joint City/County transit impact fee to equitably distribute the capital costs of transit system expansion to meet the needs of new development in both County and City areas of the Valley.

Policy C 5.4.3: Seek funding for transit system expansion and improvement from all available sources, including local, state, and federal programs and grants.

In addition, the representative policies provided above guided the development of the proposed Area Plan's land use designations and the proposed Area Plan's Land Use Policy Map. For example, the proposed Area Plan specifies high-density residential land use designations that allow up to 30 dwelling units per acre, as set forth in Section 2.0, Project Description, of the Revised Draft EIR:

"H30 – Residential 30 (UR5 – Urban Residential 5)

The Residential 30 designation provides for medium to high density apartment and condominium complexes in areas easily accessible to transportation, employment, retail, and other urban services. Allowable uses in this designation include multiple family dwellings at a minimum density of 18 dwelling units per 1 acre and a maximum density of 30 dwelling units per 1 acre. Specific allowable uses and development standards shall be determined by the underlying zoning designation. Supportive commercial and institutional uses serving the local area, such as stores, restaurants, personal services, limited medical services, and retail sale of specialty goods for neighborhood residents, may be allowed in a proposed development project within this designation without a Plan Amendment, but may require a zone change and/or other approvals. Live-work units may also be allowed, subject to the requirements of the underlying zoning designation."

(Revised Draft EIR, p. 2.0-37; see also Revised Draft EIR, 3.1-21 and Revised Draft EIR, Figure 3.1-2, Proposed Land Use Policy Map.) These proposed land use designations would generally be located near the City of Santa Clarita, near commercial land uses, and along major transit corridors. Refer to Section 3.1, Land Use, of the Revised Draft EIR for a map showing the locations of the Area Plan's proposed land use designations.

As provided above, the proposed Area Plan contains policies that would discourage sprawl and promote infill development by concentrating urban land use development in the flatter portions of the Santa Clarita Valley, integrating vertical and horizontal developments, providing flexible standards for parking and roadway design in transit-oriented development areas, providing incentives to promote

transit-oriented development near rail stations, supporting efforts by the City of Santa Clarita to provide assistance for the redevelopment of the Whittaker Bermite property, establishing transit impact fee rates that are based on the actual impacts of new development on the transit system, and seeking funding for transit system expansion and improvement from all available sources. Also, of note, CEQA contains streamlining provisions for transit-oriented projects, which often are infill in nature. (See Public Resources Code sections 21155-21155.3.) Thus, existing law also often acts as an incentive to infill development.

Also regarding the priority of achieving infill development, Table 2.0-2 in the Revised Draft EIR (page 2.0-42 of the Project Description) indicates that approximately 55 percent of the OVOV Planning Area, which includes the City's Planning Area and the County's Planning Area, is preserved as National Forest and other Open Space lands which primarily form a perimeter boundary for restricting development. The transitional low-density rural land use designations are generally located between the urban land use designations and the aforementioned Open Space lands, and these low-density rural land use designations cover approximately 25 percent of the OVOV Planning Area. The remaining 25 percent of the County Planning Area (not including the City of Santa Clarita) includes urban land use designations nearest the City and associated public services and transportation corridors. The proposed Area Plan sets a high priority for the increased densities nearest the City. **Response 7**

The comment is critical of the phrasing of the proposed Area Plan's policies, contending they are unenforceable or voluntary, asserts that effective mitigation measures to mitigate impacts to air pollution and greenhouse gas emissions are not included in the Revised Draft EIR, and also asserts that the Revised Draft EIR fails to include effective mitigation measures to encourage infill development.

Please see **Response 6** above for measures regarding infill development.

With respect to the comment's contention that the Revised Draft EIR fails to include effective measures to mitigate impacts to air pollution and GHG emissions, the mitigation measures set forth in Section 3.4 of the Revised Draft EIR are not inadequate under CEQA. Rather, the measures are designed to secure meaningful GHG emission reductions from future land use development projects that may be permitted under the proposed Area Plan. That said, in response to this comment and at the direction of County staff, certain mitigation measures recommended in Section 3.4 (see pages 3.4-136 to 3.4-139) have been revised as follows, with deletions shown in ~~strikeout~~ and additions in double-underline:

3.4-1 Prior to the issuance of building permits, the applicant shall provide evidence of green building practices and design elements that reduce GHG emissions, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building

Program and other applicable state and County standards. (See, e.g., California Department of Housing and Community Development's Green Building & Sustainability Resources handbook at www.hcd.ca.gov/hpd/green_build.pdf; e.g., the American Institute of Architects at <http://www.wiki.aia.org/Wiki%20Pages/Home.aspx>.) For discretionary projects, this evidence on GHG reduction measures shall also be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-2 Prior to the issuance of building permits, the applicant shall provide evidence of energy efficient designs, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable state and County standards, such as those found in the Leadership in Energy and Environmental Design (LEED) Green Building Ratings and/or comply with Title 24, Part 11, the California Green Building Standards Code. For discretionary projects, this evidence on energy-efficient design shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-3 Prior to the issuance of building permits, the applicant shall provide evidence of energy efficient lighting, heating and cooling systems, appliances, equipment, and control systems, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable state and County standards. (Information about ENERGY STAR-certified products is are available at http://www.energystar.gov/index.cfm?fuseaction=find_a_product; see also the California Energy Commission's database of appliances meeting federal or state energy standards at <http://www.appliances.energy.ca.gov>; see the Electronic Product Environmental Assessment Tool for ranking of energy efficient computer equipment at <http://www.epeat.net/AboutEPEAT.aspx>; see the Online Guide to Energy Efficient Commercial Equipment at http://www.aceee.org/ogeece/ch1_index.htm.) For discretionary projects, this evidence on energy efficient systems shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-4 Prior to the issuance of building permits, the applicant shall provide evidence of light colored "cool" roofs and cool pavements, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other

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applicable state and County standards. (See Consumer Energy Center, Cool Roofs at <http://www.consumerenergycenter.org/coolroof/>.) For discretionary projects, this evidence on cool roofs and pavements shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-5 Prior to the issuance of building permits, the applicant shall provide evidence of efficient lighting (including LEDs) for traffic, street, and other outdoor lighting purposes, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable state and County standards. (See http://www.energy.ca.gov/efficiency/partnership/case_studies/Tech_AsstCity.pdf.) For discretionary projects, this evidence on efficient lighting shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-6 Prior to the issuance of building permits, the applicant shall provide evidence of efficient pumps and motors for pools and spas, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable state and County standards. (See http://www.consumerenergycenter.org/home/outside/pools_spas.html.) For discretionary projects, this evidence on pool and spa motors and pumps shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-7 Prior to the issuance of building permits, the applicant shall provide evidence of the ability to install solar, and solar hot water heaters, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable state and County standards. (See <http://www.gosolarcalifornia.org/builders/index.html>; see also the California Public Utility Commission's website for solar water heating incentives at <http://www.cpuc.ca.gov/puc/energy/solar/swh.htm>.) For discretionary projects, this evidence on solar issues shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-8 Prior to the issuance of building permits for, the applicant shall provide evidence to of water-efficient landscapes, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable state

and County standards. (See <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/technical.cfm>; see also <http://www.ciwmb.ca.gov/organics/Xeriscaping>.) For discretionary projects, this evidence on water efficient landscaping shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-9 Prior to the issuance of building permits, the applicant shall provide evidence of water efficient irrigation systems and devices, such as soil-based irrigation controls and use water-efficient irrigation methods, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See http://www1.eere.energy.gov/femp/program/waterefficiency_bmp5.html; see also <http://www.water.ca.gov/wateruseefficiency/landscape/>.) For discretionary projects, this evidence on efficient irrigation methods shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-12 Prior to the issuance of building permits, the applicant shall provide evidence of consistency with "smart growth" principles to reduce GHG emissions (i.e., ensure mixed use, infill and higher density projects provide alternatives to individual vehicle travel and promote efficient delivery of goods and services). (See <http://www.epa.gov/smartgrowth/index.htm>.) For discretionary projects, this evidence on "smart growth" consistency shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-13 Prior to implementing project approval, the applicant shall preserve existing trees, to the extent feasible and consistent with mitigation measures, encourage the planting of new trees consistent with the final landscape palettes, and create open space where feasible. (See <http://www.epa.gov/dced/brownfields.htm>.) For discretionary projects, this evidence on tree preservation and planting shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

Finally, with respect to the comment that some language in some policies is not mandatory, such language is consistent with the nature of the proposed Area Plan, which is a guiding long-range planning

document that would not directly result in land use development if adopted. As future land use development proposals are presented to the County, such proposals would be evaluated for consistency with the proposed Area Plan, including all applicable Goals, Objectives, and Policies. In the case of solar and other renewable energy sources, County staff does not recommend narrowly tailoring the implementation mechanism(s) at this time because, in many cases, the appropriate mechanism will be dependent upon the status of renewable energy technologies, market and economic conditions, development type, and location, among other factors.

Response 8

The comment recommends that the County include its Development Monitoring System (DMS) as a feasible mitigation measure. The commenter states that the DMS is part of the implementation plan for the County's General Plan but has never actually been carried out.

The commenter is correct that the DMS is part of the implementation plan for the County's currently adopted Countywide General Plan, which was adopted by the Board of Supervisors (Board) on November 25, 1980. However, the commenter is incorrect because the DMS was carried out. The Board of Supervisors adopted a Countywide General Plan Amendment on April 21, 1987 that established the DMS and added policies to the Countywide General Plan related to DMS, effectively carrying out the implementation plan adopted by the Board on November 25, 1980. This Countywide General Plan Amendment specified that the DMS would apply to several areas within unincorporated Los Angeles County, including the unincorporated Santa Clarita Valley. The proposed Area Plan does not include amendments to the policies in the Countywide General Plan related to the DMS. Those policies will remain in effect until such time that the Countywide General Plan is updated.

The proposed Area Plan, like the currently adopted Area Plan, is a component of the Countywide General Plan that provides goals, objectives, and policies that only apply to the unincorporated Santa Clarita Valley. The goals, objectives, and policies in the Area Plan supplement those in the Countywide General Plan and do not replace them unless specifically noted in the Area Plan. All development projects within the unincorporated Santa Clarita Valley must be consistent with the goals, objectives, and policies in both the Countywide General Plan and the Area Plan. Therefore, it is not necessary to reiterate policies in the Countywide General Plan, such as those regarding DMS, in the proposed Area Plan. Accordingly, it is also not necessary to add DMS as a mitigation measure. As previously noted, the proposed Area Plan does not include amendments to the policies in the Countywide General Plan related to the DMS and those policies will remain in effect until such time that the Countywide General Plan is updated.

Response 9

The comment recommends that any “major new development” in the County document how it meets the criteria in the DMS, that the project will pay for all capital costs, that the housing is needed and that it meets a particular jobs/housing balance.

See **Response 8** above, regarding the DMS. No further response is required. However, it should be noted that the County assumes any “major new development” would require discretionary approval from the County. Given the need for discretionary approval, any “major new development” would be evaluated for consistency with the proposed Area Plan, including all applicable Goals, Objectives, and Policies, as explained in **Response 6** and **Response 7** above. Also given the need for discretionary approval, any “major new development” would also be subject to project-level environmental analysis under CEQA, and would be subject to the proposed mitigation measures identified in the Revised Draft EIR (which was a program-level environmental analysis of the proposed Area Plan), as those mitigation measures would apply to all development requiring discretionary approval under the proposed Area Plan, as also explained in **Response 7** above.

Response 10

The comment recommends that the County include a Purchase of Development Rights Program to stimulate infill development and discourage urban sprawl in order to reduce impacts to air quality and climate change.

The proposed Area Plan already includes numerous policies to discourage sprawl and stimulate infill development. See **Response 6** above for various examples of such policies. Also, the proposed Area Plan contains policies that would restrict urban-style developments in rural areas and would protect the rural nature and characteristics of these areas. Representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.1.1: Where appropriate, protect mountains and foothills surrounding the Valley floor from urban development by designating these areas as Open Space or Rural Land on the Land Use Map.

Policy LU 1.1.6: Preserve the rural lifestyle in canyons and low-density, outlying areas of the Santa Clarita Valley, through designating these areas as Rural Land on the Land Use Map where appropriate.

Policy LU 1.3.3: Discourage development on ridgelines and lands containing 50 percent slopes so that these areas are maintained as natural open space.

Policy LU 1.3.4: Encourage density transfers where appropriate to facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity, provided that urban densities (exceeding one dwelling unit per acre) are not permitted in rural areas.

With respect to fees, the proposed Area Plan contains policies and incentives that would promote infill development and discourage greenfield development in urban fringe areas. Such representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.2.14: Evaluate development fee schedules on an ongoing basis to determine fee incentives to attract development. [This policy was not specifically listed in the above-referenced sections of the Revised Draft EIR but is included in the OVOV Area Plan.]

Policy LU 9.2.2: Require all new development mitigate its impact on existing sewer capacity by upgrading facilities when warranted or payment of a fee to allow construction of new facilities when needed. [This policy was not specifically listed in the above-referenced sections of the Revised Draft EIR but is included in the OVOV Area Plan.]

Policy C 2.6.2: Evaluate the feasibility of establishing a joint City/County Intelligent Transportation Management System (ITMS) impact fee for new development that is unable to otherwise mitigate its impacts to the roadway system through implementation of the adopted Highway Plan.

Policy C 5.4.1: Establish transit impact fee rates that are based on the actual impacts of new development on the transit system, and regularly monitor and adjust these fees as needed to ensure adequate mitigation.

Policy C 5.4.2: Evaluate the feasibility of establishing a joint City/County transit impact fee to equitably distribute the capital costs of transit system expansion to meet the needs of new development in both County and City areas of the Valley.

As can be seen by the policies and mitigation measures provided in this response, in **Response 6** and **Response 7** above, and in **Response 11** and **Response 12** below, the proposed Area Plan already includes sufficient measures to substantially lessen impacts to air quality and global climate change. Once a jurisdiction has done so, it is not required to adopt every mitigation proposal or recommendation brought to its attention (*San Franciscans for Reasonable Growth v. City and County of San Francisco* (1989) 209 Cal.App.3d 1502, 1519). CEQA does not require analysis of every imaginable mitigation measure but is concerned with feasible means of reducing environmental effects; discussion of mitigation measures is subject to the “rule of reason” in light of the court’s role merely as determining whether an EIR is sufficient as an information document (*Concerned Citizens of South Central Los Angeles, Inc. v. Los Angeles Unified School District* (1994) 24 Cal.App.4th 826, 840-843).

Response 11

The comment states that there are numerous incentives and tools that the County could use to encourage “infill development over rural sprawl” to reduce impacts to air quality and climate change. As examples, it suggests reducing fees for traffic improvements, or reducing processing costs for infill projects or establishing a database related to urban infill.

It should be noted that the County Zoning Ordinance already addresses density bonuses and affordable housing incentives (Part 17 of Chapter 22.52), mixed-use developments (Part 18 of Chapter 22.52), joint live and work units (Part 19 of Chapter 22.52), housing permits (Part 18 of Chapter 22.56), and transit oriented districts (Part 8 of Chapter 22.44). These provisions are intended to encourage and support infill development and affordable housing development at infill locations. These provisions also specify reduced processing costs in certain circumstances. Cumulatively, these provisions, which were all previously adopted as ordinances by the Board of Supervisors, demonstrate the County’s ongoing commitment to encouraging infill development, especially in more urbanized unincorporated areas that are near employment centers and transit corridors. As discussed below, the proposed Area Plan recognizes and amplifies this ongoing commitment, as do other concurrent activities, such as the proposed Countywide General Plan Update.

In addition, the proposed Area Plan already contains policies that would incentivize infill development. Representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.1.2: On the Land Use Map, concentrate urban development within flatter portions of the Santa Clarita Valley floor in areas with limited environmental constraints and served with infrastructure.

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- Policy LU 1.1.3:** Discourage urban sprawl into rural areas by limiting non-contiguous, “leap-frog” development outside of areas designated for urban use.
- Policy LU 1.1.5:** Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.
- Policy LU 1.2.13:** Encourage use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses, access to public transit, and opportunities for living and working within the same community.
- Policy LU 2.1.2:** On the Land Use Map, integrate land use designations in a manner that promotes healthy, walkable communities, by providing an appropriate mix of residential and service uses in proximity to one another.
- Policy LU 2.3.2:** Either vertical or horizontal integration of uses shall be allowed in a mixed-use development, with an emphasis on tying together the uses with appropriate pedestrian linkages.
- Policy LU 2.3.5:** Mixed-use developments shall be designed to create a pedestrian-scale environment through appropriate street and sidewalk widths, block lengths, relationship of buildings to streets, and use of public spaces.
- Policy LU 4.3.5:** Support efforts by the City of Santa Clarita to coordinate with property owners and environmental agencies, and provide assistance as appropriate, to promote clean-up and redevelopment of the Whittaker Bermite property as a business and employment center.
- Policy C 1.2.6:** Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.
- Policy C 4.1.6:** Provide incentives to promote transit-oriented development near rail stations.
- Policy C 5.4.1:** Establish transit impact fee rates that are based on the actual impacts of new development on the transit system, and regularly monitor and adjust these fees as needed to ensure adequate mitigation.

Policy C 5.4.2: Evaluate the feasibility of establishing a joint City/County transit impact fee to equitably distribute the capital costs of transit system expansion to meet the needs of new development in both County and City areas of the Valley.

Policy C 5.4.3: Seek funding for transit system expansion and improvement from all available sources, including local, state, and federal programs and grants.

As listed above, the proposed Area Plan contains policies that would promote infill development by concentrating urban land use development in the flatter portions of the Santa Clarita Valley, integrating vertical and horizontal developments, providing flexible standards for parking and roadway design in transit-oriented development areas, providing incentives to promote transit oriented development near rail stations, supporting efforts by the City of Santa Clarita to provide assistance for the redevelopment of the Whittaker Bermite property, establishing transit impact fee rates that are based on the actual impacts of new development on the transit system, and seeking funding for transit system expansion and improvement from all available sources. Also, of note, CEQA contains streamlining provisions for transit-oriented projects, which often are infill in nature (see Public Resources Code sections 21155-21155.3). Thus, existing law also often acts as an incentive to infill development.

Lastly, the proposed Area Plan is a component of the Countywide General Plan that provides additional goals, policies, and objectives that only apply to the unincorporated Santa Clarita Valley. The Countywide General Plan is also in the process of being updated, and the most recent draft of the updated General Plan was released for public review in April 2011 and is available on the Internet at <http://planning.lacounty.gov/generalplan>. The most recent draft identifies goals, policies, incentives, and tools that the county could use to encourage “infill development over rural sprawl” to reduce impacts to air quality and climate change. For example, the Infill Program (pages 198-200) represents the County’s coordinated efforts on a variety of programs to facilitate infill development in targeted areas. Specific efforts include encouraging Transit Oriented Development (TOD) through ordinance amendments and a host of other TOD planning tools, amending the Mixed Use Ordinance and creating additional mixed use design guidelines, preparing an Adaptive Reuse Ordinance, and preparing an Infill District Overlays Ordinance. If adopted by the Board of Supervisors, the proposed Countywide General Plan would apply to all of the County’s unincorporated areas, not just those within the Santa Clarita Valley that are covered by the proposed Area Plan.

Response 12

The comment suggests that the County increase impact fees to fund transit improvements, that the County requires paid parking strategies to change suburban behavior, and that the County institute congestion pricing as other measures to reduce impacts to air quality and climate change.

The proposed Area Plan already contains policies related to parking and transit-oriented areas that would reduce impacts to air quality and climate change. Representative policies that were included in Section 3.1, Land Use, Section 3.2, Transportation and Circulation, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are shown below:

- Policy LU 2.3.6:** Provide parking alternatives in mixed-use developments, including subterranean parking and structured parking to limit the amount of surface area devoted to vehicle storage.
- Policy LU 3.4.7:** Minimize the prominence of areas devoted to automobile parking and access in the design of residential neighborhoods.
- Policy LU 7.3.3:** Seek methods to decrease impermeable site area where reasonable and feasible, in order to reduce stormwater runoff and increase groundwater infiltration, including use of shared parking and other means as appropriate.
- Policy C 1.2.6:** Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.
- Policy C 2.2.6:** Within residential neighborhoods, promote the design of “healthy streets” which may include reduced pavement width, shorter block length, provision of on-street parking, traffic-calming devices, bike routes and pedestrian connectivity, landscaped parkways, and canopy street trees.
- Policy C 3.2.4:** The City and County will encourage new commercial and retail developments to provide prioritized parking for electric vehicles and vehicles using alternative fuels.
- Policy C 3.3.1:** Evaluate parking standards and reduce requirements where appropriate, based on data showing that requirements are in excess of demand.
- Policy C 3.3.2:** In pedestrian-oriented, high density mixed use districts, provide for common parking facilities to serve the district, where appropriate.
- Policy C 3.3.3:** Promote shared use of parking facilities between businesses with complementary uses and hours, where feasible.

- Policy C 3.3.4:** Within transit-oriented development projects, provide incentives such as higher floor area ratio and/or lower parking requirements for commercial development that provides transit and ride-share programs.
- Policy C 3.3.5:** Encourage convenient short-term parking in high-activity areas, and all day parking at the periphery of the development areas.
- Policy C 3.3.6:** In the development review process, prioritize direct pedestrian access between building entrances, sidewalks and transit stops, by placing parking behind buildings where possible, to the sides of buildings when necessary, and always away from street intersections.
- Policy C 3.3.7:** Create parking benefit districts which invest meter revenues in pedestrian infrastructure and other public amenities wherever feasible.
- Policy C 3.3.8:** Establish performance pricing of street parking so that the costs are enough to promote frequent turnover, with a goal to keep 15 percent of spaces empty at all times, whenever feasible.

As evidenced by the policies provided above, the proposed Area Plan includes numerous policies that would provide varying and flexible standards for parking, and thus the proposed Area Plan accounts for the comment's recommendation. Additionally, the latest draft of the proposed Countywide General Plan (released in April 2011 and available on the Internet at <http://planning.lacounty.gov/generalplan>) includes the preparation of a Parking Ordinance identifying best practices in land use and parking requirements in its Implementation Program (page 202). Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 13

The comment states that the proposed Area Plan "will have an immense and lasting impact on land use and the quality of life in Los Angeles County" and that it does little to prevent urban sprawl or foster collaborative planning by the City and County to achieve a "smarter and more compact development."

The County disagrees with this comment as it is contrary to the very essence and purpose of the joint "One Valley One Vision" (OVOV) planning effort with the City of Santa Clarita as well as the County's proposed Area Plan, which was developed as part of the OVOV joint planning effort. The County, through its proposed Area Plan, has reduced densities in outlying environmentally sensitive areas within its jurisdiction and the City, through its proposed General Plan, has increased densities in urban areas

within its jurisdiction. Moreover, see **Response 10** and **Response 11**, above for policies designed to reduce sprawl and encourage infill development within the unincorporated Santa Clarita Valley.

Nonetheless, the comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 14

The comment states that the proposed Area Plan's promise of jobs-housing balance and in-fill development are not borne out by mandatory policies and programs or by effective mitigation measures. The comment does not provide specifics as to which policies or programs and/or which mitigation measures are deficient; consequently, no further response can be provided. The commenter is referred to **Response 11** regarding specific policies regarding infill development in the proposed Area Plan. In addition, please see **Letter E11, Response 8** for a discussion regarding jobs-housing balance through shorter trips and less per capita VMT (Vehicle Miles Traveled).

Response 15

The comment generalizes that the proposed Area Plan may conflict with the 2006 Global Warming Solutions Act (AB 32) and the 2008 Sustainable Communities and Climate Protection Act (SB 375) and would jeopardize efforts to reduce VMT's and associated GHG emissions.

As background, the requirements of SB 375 were summarized on pages 3.4-28 and 3.4-29 of the Revised Draft EIR. As stated on these pages, SB 375 requires CARB to adopt GHG reduction targets for passenger vehicles for each of California's Metropolitan Planning Organizations (MPOs). SB 375 further requires the MPOs to adopt, as part of their regional transportation plan (RTP), a "sustainable communities strategy" (SCS) that demonstrates how the region will meet its target through integrated land use, housing, and transportation planning.

For SCAG's region, CARB adopted per capita GHG reduction targets of 8 percent by 2020 and 13 percent by 2035, relative to the 2005 per capita levels. These targets apply to the SCAG region *as a whole*, and not to individual cities or subregions.⁵

SCAG will develop its SCS as an element of its 2012 RTP. The draft 2012 RTP, including the SCS element, is currently scheduled for public release in late 2011 (November/December). To date, SCAG has identified possible strategies for reducing the per capita VMT and GHG emissions from the land use and

⁵ For additional information regarding CARB's SB 375 efforts, please see <http://arb.ca.gov/cc/sb375/sb375.htm>.

transportation sectors. These strategies include mixing land uses (i.e., housing, retail, jobs); focusing new growth near transit; increasing housing densities within employment areas; and prioritizing infill development. While the bulk of the SB 375 reductions are expected to be achieved through VMT reductions, SCAG also is pursuing other non-VMT strategies that would result in vehicles emitting fewer GHGs per mile driven. These strategies include operational improvements to relieve roadway “bottlenecks;” speed limit reductions; and traffic signal coordination.⁶ Details regarding these and other strategies are expected to be included in the draft 2012 RTP.⁷

To date, SCAG has taken a collaborative approach with local and subregional stakeholders and jurisdictions. During the initial target setting process, SCAG collaborated with jurisdictions to develop growth forecasts and identified the local level of commitment to various GHG-reducing land use and transportation strategies. SCAG currently is holding workshops with local and subregional stakeholders and jurisdictions in order to seek commitments on specific strategy elements to be included in the draft 2012 RTP. The County is committed to participating in the preparation of the SCS and coordinating with SCAG.

SCAG has not yet adopted its SCS, however, CEQA does not require that the proposed Area Plan’s consistency with SCAG’s ultimate SCS be assessed; such an evaluation would be speculative. (See, e.g., *State CEQA Guidelines* Section 15145.) In any event, Government Code Section 65080(b)(2)(K) provides:

“Neither a sustainable communities strategy nor an alternative planning strategy regulates the use of land [...] Nothing in a sustainable communities strategy shall be interpreted as superseding the exercise of land use authority of cities and counties within the region [...] Nothing in this section shall require a city’s or county’s land use policies and regulations, including its general plan, to be consistent with the regional transportation plan or an alternative planning strategy.”

In any event, the proposed Area Plan does contain policies that would reduce VMT in the unincorporated Santa Clarita Valley (see Revised Draft EIR, pp. 3.2-55 to 3.2-57). And, according to the California Air Pollution Control Officers Association’s (CAPCOA) guidance for quantifying project-level GHG reductions, projects that are located in suburban centers reduce VMT by 10 percent compared to the statewide average, and compact infill development reduces VMT by 30 percent compared to the statewide average.⁸ The proposed Area Plan’s policies would facilitate infill and suburban center development. As a result, the proposed Area Plan would guide future proposed developments towards

⁶ SCAG, “SB 375 Regional Implementation Process, Presentations, North Los Angeles County,” http://www.scag.ca.gov/sb375/pdfs/ts/SB375TargetSetting_NorthLA.pdf.

⁷ For more information on SCAG’s SB 375 efforts, please see <http://www.scag.ca.gov/sb375/>.

⁸ CAPCOA, *Quantifying Greenhouse Gas Mitigation Measures*, (2010) 159-160.

VMT reductions consistent with SB 375. In fact, according to information from SCAG, the proposed Area Plan creates more transit-oriented development, enhances the jobs/housing balance, and reduces Valley-wide GHG emissions, consistent with SB 375's objectives.⁹

Furthermore, Section 3.4, Global Climate Change, of the Revised Draft EIR also assessed the consistency of the proposed Area Plan with GHG reduction strategies identified by various agencies and entities:

- Table 3.4-7, Consistency of Sustainable Strategies with AB 32 Scoping Plan Measures;
- Table 3.4-9, Consistency with the 2006 Climate Action Team Report;
- Table 3.4-10, Consistency with Office of Planning and Research Suggested Measures;
- Table 3.4-11, Attorney General's Recommended General Plan Mitigation Measures; and
- Appendix 3.4 [containing a consistency analysis of the proposed Area Plan relative to reduction strategies recommended by CAPCOA].

As discussed in the above-referenced tables and appendix, the proposed Area Plan generally is consistent with the identified GHG reduction strategies and, therefore, in line with AB 32 and Executive Order No. S-3-05.

Consequently, the County believes that the proposed Area Plan is consistent with SB 375 and AB 32 and will not set back efforts to reduce VMT or associated greenhouse gas emissions.

Response 16

The commenter states that the County must "fix these deficiencies" and thanks the County for consideration of its comments

As the responses above indicate, the County disagrees that there are any deficiencies identified by the commenter that need to be fixed. The County acknowledges the commenter's concerns, as identified in the comment letter, and its receipt of the reference materials enclosed with the comment letter, which will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan and Revised Final EIR.

⁹ SCAG, "SB 375 Regional Implementation Process, Presentations, North Los Angeles County," http://www.scag.ca.gov/sb375/pdfs/ts/SB375TargetSetting_NorthLA.pdf.

1/4

To the Department of Regional Planning:

Thank you for taking the time to meet with us last year to try to explain what the land use changes mean and how they were arrived at.

I am writing to you again on behalf of the Lechler Family Trust to address my family's concerns about the proposed revisions to the Los Angeles County General Plan that are currently being considered. Our particular concern arises from the proposal to create a new land designation for the "Santa Felicia Significant Ecological Area." My family's parcels—APN 3247-028-007, 008, 009, 010; 3247-035-003 & 004; 3247-036, 010, 011 and 020—all fall wholly or partially within the proposed boundaries of the Santa Felicia SEA.

1

The proposal to create the renamed Santa Felicia SEA, the proposed delineation of its boundaries, and the development restrictions and RL20 classification that have been suggested for the Santa Felicia SEA are all the result of arbitrary choices and speculation. My concerns are addressed below.

The Designation of a new Santa Felicia SEA

Neither the draft EIR (nor any other publicly available materials from the planning department's website) explain what factors led to the decision to propose the creation of the Santa Felicia SEA. Under the Planning Department's guidelines and procedures, including those issued by the Planning Director in March of 2004, the Significant Ecological Area Technical Advisory Committee (SEATAC) is charged with the responsibility of conducting intensive studies and preparing detailed reports on any project that implicates biological resources. SEATAC, however, has failed to provide any such study for the proposed new Santa Felicia SEA.

2

For example, there are no known significant biological resources, endangered species, critical habitats or other unique environmental concerns on our property. This is clear from section 3.7 of the draft EIR prepared by Impact Science, Inc. I direct your attention specifically to Figure 3.7-1 and tables 3.7-1 and 3.7-2, which document the various sensitive plants and sensitive species occurrences within the Los Angeles County planning area. While the SEA description provided in the plan claims that sensitive species "likely" to be found on our property include the red-legged frog, the arroyo toad and the California condor, not a single sensitive species or plant is documented on our property nor on the property of our neighbors. We maintain that we have never seen such species on our land. floral diversity described in the plan, derived from aerial photographs, is not up-to-date, as our property was burned during the Ranch Fires several years ago and a majority of the native plants (include sage and chapparal) have not returned. Further, the animal diversity (which consisted of species common to all areas in Southern California) has been significantly reduced on our property after this fire. The burden of proof should lie with the County to provide real data to support the hypothesis that these species do occur on the property, not with the land owners.

3

The area of the proposed Santa Felicia SEA, which is adjacent to the Angeles National Forest, has always had low density zoning (1 home per every 5 or 10 acres of land). And Policy CO 3.4.3 is to maintain the low density rural residential uses adjacent to forest land; the policy is not to virtually eliminate rural residential uses.

4

With regards to the decision to create a new Santa Felicia SEA, the draft EIR considered only one alternative – the alternative of doing nothing. And the draft EIR’s only assessment was that:

The proposed Area Plan has designated larger and additional areas, such as the Cruzen Mesa Vernal Pools, Piru Creek, all of the Santa Clara River, and later portions of the Santa Susana Mountains, for SEAs land use designation. Impacts on biological resources under Alternative 1 [doing nothing] would therefore be greater than those under the proposed Area Plan.

4

The draft EIR simply *assumes* that the reduced housing density allowed under the RL20 designation would have less impact on biological resources than would occur under the current zoning. But there is no evidence, analysis or study to justify the assumption.

Under the area’s current zoning (heavy agricultural A2 classification with H1 hillside limitations), one residence can be constructed on every 5 or 10 acres. Under the RL20 restrictions, only one residence can be constructed on every 20 acres – a density restriction so great that it is unlikely that residential uses could be economically feasible. The 1:5 or 1:10 restrictions, in contrast, would likely still allow the area to eventually be developed with widely spaced homes and a lower level of light agricultural use.

5

Because the 1:20 restrictions under the RL20 designation make rural residential uses economically unfeasible, however, it is plausible, and even likely, that with the proposed new Santa Felicia SEA classification, the land could only be used instead for heavy agricultural uses. Quite simply, there is no support for the assumption that allowing one home to be built on every 5 or 10 acres is more harmful to the environment than the heavy agricultural uses that the land would otherwise experience under the RL20 zoning.

In addition, the County is considering new SEA regulations further limiting agricultural use. **The combination of extremely low density residential land use, extensive oversight by an unelected committee dedicated to limiting development and heavily restricted agricultural use will make the property economically inviable.**

6

The draft EIR notes that the eastern boundary follows a “predominant ridgeline.” But the report contains no evidence that there are more ecologically sensitive plants and animals on one side of that ridge line than on the other. Indeed, the draft EIR indicates just the opposite, noting that “all natural or semi-natural habitat types within the County’s Planning Area may potentially support one or more of these [92 special status] species.” (Draft EIR at page 3.7-39.)

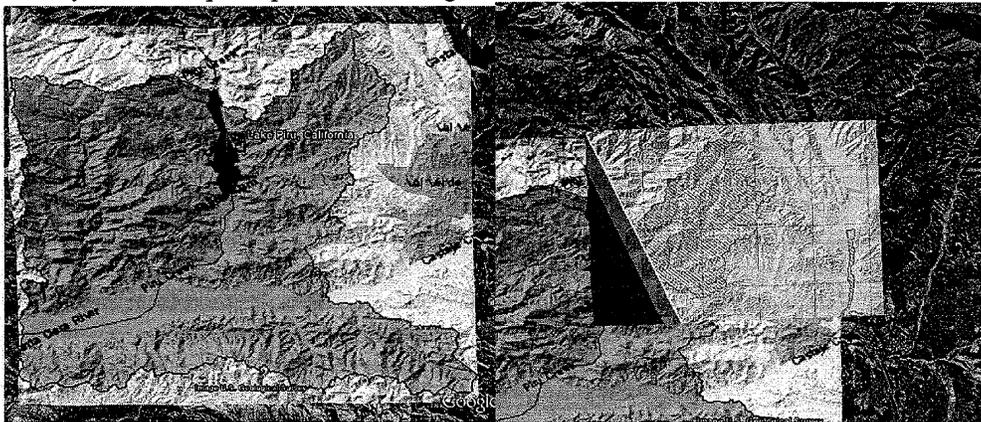
The use of the ridge line to establish the eastern boundary of the proposed Santa Felicia SEA is completely arbitrary. The aerial photographs and topographical maps hosted on the Planning Department’s web site, as well as maps and data from the United States Geological Service and the State of California’s Cal-Atlas databases maps, show that **the environmental features on the west side of the ridge line are indistinguishable from those on the east or south sides of the ridge line.** Why, then, should the property owners on the west side be limited to one home on every 20 acres, while those owners just a few yards away on the west side of the ridge line are proposed to be subject to R1, R2 or R5 designations, allowing them to construct up to 20 times as many homes on the same amount of land?

7

The draft EIR states that the southern boundary of the Santa Felicia SEA was established “to encompass the entire watershed that ultimately drains into Lake Piru in Ventura County.” The document fails to provide any information or reason why the Lake Piru watershed is more ecologically sensitive than the Santa Clara River watershed on the other side of the southern boundary. And, indeed, **the proposed Santa Felicia SEA boundaries do not extend to encompass the Santa Felicia watershed as the draft EIR reports.** The Lake Piru Watershed geographically includes the lands below the ridgeline to the south of the proposed Santa Felicia SEA, as well as the Santa Clara River, through to Lake Piru. However, at longitude 34-28 N, the proposed Santa Felicia SEA boundary arbitrarily departs from the watershed boundary with a sharp westerly turn.

I have attached copies of the proposed Santa Felicia SEA printed from the Planning Department’s web site and, and a copy of the Lake Piru watershed boundaries as recorded by the State of California and published on its CERES website (California Environmental Resources Evaluation System located at <http://ceres.ca.gov>.) I have also overlaid both maps atop a satellite image of the area:

8



Lake Piru Watershed

Proposed SEA Overlaid

Development Restrictions Within the Proposed Santa Felicia SEA

The draft EIR and proposed general plan amendments also fail to identify any reason for the RL20 density restriction that is proposed for the Santa Felicia SEA. Much of the property has slopes of less than 50%; **some parcels have fully flat areas and slopes between 25-50%. All of the parcels should not be blanketed with such restrictive land use because some portions of the property fit the criteria for an RL20.** Hillside management was far more reasonable because it allowed each parcel and development plan to be considered individually, so that the allowances and restrictions were appropriate for the actual situation of the land.

9

Further, both the existing SEAs, and the other newly proposed SEAs, allow for development density far greater than 1 home for every 20 acres. In the proposed Cruzan Mesa Vernal Pools SEA, the proposed general plan amendments would authorize 1 home for every 5 acres. In the proposed Santa Clara River SEA, the proposed general plan amendments would authorize a broad range of density developments, including RL2 (1 home for every 2 acres) RL5 (1 home for every 5 acres) and RL10 (1 home for every 10 acres), among others. The proposed Santa Susana Mountains/Simi Hills SEA allows

significant housing density and commercial development pursuant to the Newman Ranch Special Plan.

9

As the land use allowances under the Newman Ranch Special Plan demonstrate, **environmental and biological uses can be protected while still allowing development.** The same developmental constraints exist on this property, if not more so—there are actual documented sensitive and threatened species in addition to the riverbed.

10

Designation of the Santa Felicia SEA as RL20, while allowing much more dense land use in other SEAs but without assigning an SEA designation to lands with similar constraints, is capricious and unfair.

11

If, as Regional Planning is convinced, the developmental constraints on these parcels are so extreme as to deserve the most restrictive land use in Regional Planning’s toolbox (be it RL20 or RL500); if no development should occur on this property due to an actual severe ecological sensitivity for which there is first-hand direct data; then the land should be purchased by the County at current fair market value for open space.

It is already well accepted among land owners, assessors and realtors that **an SEA designation is a serious cloud on a property’s title.** The staff of Regional Planning even joked to us that, when asked how far one can build from a creek, SEATAC would answer “a mile.” The application of this designation is unfounded, with no evidence that the property fits the established criteria for an SEA other than extrapolation from unrelated properties and assumptions based aerial photographs.

12

For the sake of myself and my young cousin Amanda who will ultimately inherit this land, I ask that you do not turn our family legacy into a tax burden we will be unable to use in any economically viable manner or even sell to meet future estate tax liabilities. I request that the land use remain similar to what was allowed under Hillside Management. **An RL5 or RL10 designation would be more appropriate. Further, the SEA designation should be removed and applied only if and when the County has real data regarding the ecological features of the subject properties.**

Sincerely,
Nicole Valenzuela

Letter No. D86

Letter from Nicole Valenzuela, Date Unknown

Response 1

The commenter expresses the opinion that the designation of the proposed Santa Felicia Significant Ecological Area (SEA) is the result of arbitrary choices and speculation. The commenter also expresses the opinion that the proposed Area Plan Land Use Policy Map's Rural Land 20 (RL20) land use designation on the Lechler Family Trust properties is also the result of arbitrary choices and speculation.

The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. No further response is required because the comment does not raise an environmental issue. That being said, with regard to the proposed RL20 land use designation, it should be noted that the Land Use Element of the proposed Area Plan states, "a comprehensive assessment of existing land uses and their distribution was conducted using aerial photo analysis, field surveys, and a geographic information system. Land was evaluated for suitability of development type and intensity based on topography, access, proximity to infrastructure, environmental constraints, character of surrounding development, economic viability, and other criteria." This comprehensive assessment evaluated land for suitability of development type and intensity to ensure that the proposed Land Use Policy Map was consistent with the Goals, Objectives, and Policies of the proposed Area Plan's Land Use Element. In conducting this comprehensive assessment, County staff observed that the Lechler Family Trust properties contained steep topography that may be susceptible to landslides, had limited access, had limited proximity to infrastructure, and had environmental constraints (including the proposed Santa Felicia SEA), which would preclude intense residential development. Accordingly, County staff determined that an RL20 designation, with a maximum density of 1 dwelling unit per 20 acres, was appropriate, as it reflected these constraints, precluded intense residential development, and ensured that future development would be compatible with the very low density rural character of the surrounding area. It should be noted that on November 28, 2006, Ms. Linda Pyburn, another member of the Lechler Family Trust, testified before the Board of Supervisors. Ms. Pyburn's testimony stated, in part, "Access to our property is by a privately maintained road down a very steep mountain. There are no shoulders. It is completely unsuitable and unsafe to share with equestrian, hikers or bikers...In addition, far from being threatened by encroaching development, our land is completely unsuitable for even the type of development that used to occur in Hasley Canyon. We have very - much steeper slopes, several of which are prone to landslides. We also have a very narrow valley, half of which is a wash."¹⁰ Ms.

¹⁰ [https://docs.google.com/viewer?a=v&q=cache:0xRelSuVY90J:file.lacounty.gov/bos/transcripts/11-28-06%2520Board%2520Meeting%2520Transcript%2520\(C\).doc+linda+pyburn+board+of+supervisors&hl=en&gl=us&pid=bl&srcid=ADGEESHfnSkD_2jBmUk9HHgGPD7Lck8I4KnCngel2Wy4LbQ52-FWtlRQ850SmLEbEs_wEgkiAmscCOuyqnzFIyOTF3pn1HbqssgiSGuLwjVWpqOiPiIHjBzD13_9CvPoyNVwCSvVqivf&sig=AHIEtbTpJxt9FsuYBqz1_3kYvOH3ahkLXg](https://docs.google.com/viewer?a=v&q=cache:0xRelSuVY90J:file.lacounty.gov/bos/transcripts/11-28-06%2520Board%2520Meeting%2520Transcript%2520(C).doc+linda+pyburn+board+of+supervisors&hl=en&gl=us&pid=bl&srcid=ADGEESHfnSkD_2jBmUk9HHgGPD7Lck8I4KnCngel2Wy4LbQ52-FWtlRQ850SmLEbEs_wEgkiAmscCOuyqnzFIyOTF3pn1HbqssgiSGuLwjVWpqOiPiIHjBzD13_9CvPoyNVwCSvVqivf&sig=AHIEtbTpJxt9FsuYBqz1_3kYvOH3ahkLXg)

Pyburn's testimony mentions the constraints that County staff observed before it determined that an RL20 designation was appropriate.

Response 2

The commenter states that the Revised Draft EIR does not explain the factors that led to the proposed designation of the Santa Felicia SEA.

Section 3.7, Biological Resources, of the Revised Draft EIR, sets forth the original eight criteria used to designate SEA's in the 1976 Los Angeles County SEA Study (pg. 3.7-12 to 3.7-13). Section 3.7 also describes the proposed Santa Felicia SEA, and that description explains the basis for the proposed Santa Felicia SEA and the criteria used to designate the proposed Santa Felicia SEA (pg. 3.7-23 to pg. 3.7-26). While the commenter states that the County's Significant Ecological Area Technical Advisory Committee (SEATAC) has failed to provide any study for the Santa Felicia SEA, SEATAC discussed the resources of the proposed Santa Felicia SEA, as part of a regular briefing by Department of Regional Planning staff on the SEA Update Program, at its April 5, 2010 meeting. The commenter's reference to the March 2004 SEATAC Guidelines is misguided, as this document describes the information that is to be included in biology reports for proposed development projects located within an SEA. No SEAs, existing or proposed, are described in this document. SEATAC is not responsible for conducting intensive studies or preparing detailed reports, but is instead an advisory body to the County in the review of proposed development projects located within an SEA and in the review of potential impacts that such a project may have on the biological resources within an SEA. The comment raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment raises issues that do not appear to relate to any physical effect on the environment and does not otherwise raise an environmental issue, no further response is required.

Response 3

The commenter states that Figure 3.7-1 and Tables 3.7-1 and 3.7-2 in the Revised Draft EIR show that there are no known significant biological resources, endangered species, critical habitats, or other unique environmental concerns on the commenter's property. The commenter further states that no sensitive species have been documented on their property or on their neighbor's property. Additionally, the commenter states that the Ranch Fire burned much of the natural habitat five years ago, most of which has not returned.

Tables 3.7-1 and 3.7-2 in the Revised Draft EIR document the special-status wildlife and plant species that are known to exist in the unincorporated Santa Clarita Valley. For instance, there is suitable habitat in the proposed Santa Felicia SEA to support the Red Legged Frog and the Arroyo Toad. Figure 3.7-1 in the

Revised Draft EIR shows the approximate locations of these species based on records reported to the California Department of Fish and Game (CDFG). But this does not mean that these species are only located at the locations depicted on Figure 3.7-1 in the Revised Draft EIR. They could very well be in adjacent areas that contain habitat that would support them. There is an under reporting of resources precisely because no development applications have been submitted to the County in this area. As noted in the Revised Draft EIR's description of the proposed Santa Felicia SEA, "Sensitive species include those listed, or candidates for listing by the USFWS [United States Fish and Wildlife Service], CDFG, and CNPS [California Native Plant Society]. These species include, but are not limited to, the California condor, red-legged frog and Arroyo toad. The SEA identifies other species observed, recorded in the CNDDDB [California Natural Diversity Database], or reported in previous documentation as observed within or in the immediate vicinity of the SEA" (pg. 3.7-26) The commenter provides statements about biological resources but does not provide any substantiating documentation. The only way to determine that a species is absent from a property is to conduct surveys consistent with the SEATAC Guidelines mentioned in **Response 2**, above. The SEATAC Guidelines are clear, in that the designation of the SEAs is approximate based upon a number of factors. Detailed biological surveys must be conducted by a County-approved biologist to determine presence of species.

With regard to the commenter's contention that the majority of native species has not returned five years after the Ranch Fire, this is highly unlikely. In fact, native plants come back before other plants. Many native species that were previously over-crowded by non-natives often come back because they now have better access to water and light and have room to grow.

Response 4

The commenter states that the Revised Draft EIR proposed the Santa Felicia SEA and that the Revised Draft EIR only considered one alternative – to do nothing. The commenter further states that the Revised Draft EIR assumes that the proposed RL20 designation assumes that reduced density would have fewer biological impacts than would occur under the currently adopted land use designation (Hillside Management) but that there is no evidence or analysis to justify this assumption.

The commenter misreads the Revised Draft EIR. The Revised Draft EIR provides an analysis for each environmental topic that compares current "on the ground" conditions (baseline) to buildout of the proposed Area Plan and it also provides an analysis for each environmental topic that compares the currently adopted Area Plan to the proposed Area Plan (identified as a "Plan to Plan" analysis). These analyses consider all environmental impacts of the proposed Area Plan. Please see the Plan to Plan analysis in the Revised Draft EIR for each environmental topic. The currently adopted Area Plan would allow increased residential density when compared to the proposed Area Plan, which will create more air

quality impacts, noise impacts, impacts to public services, impacts to utilities, and will impact more acreage, thereby creating more biological impacts. In addition, development projects proposed within an SEA receive greater scrutiny of review by SEATAC and therefore, the biological resources present would have greater protection because discretionary approval is required in most instances (see Section 22.56.215 of the County Code).

Response 5

The commenter expresses the opinion that the proposed RL20 land use designation would make rural residential uses economically infeasible, that the land could only be used for heavy agricultural uses, and that there is no basis to conclude that a lower density land use designation is less harmful to the environment than a higher density land use designation.

The commenter raises issues that do not appear to relate to any physical effect on the environment. The land use scenario described by the commenter is speculative and cannot be analyzed with any specificity. In addition, as stated in **Response 1**, above, County staff observed that the Lechler Family Trust properties contained steep topography that may be susceptible to landslides, had limited access, had limited proximity to infrastructure, and had environmental constraints (including the proposed Santa Felicia SEA), which would preclude intense residential development. Accordingly, County staff determined that an RL20 designation, with a maximum density of 1 dwelling unit per 20 acres, was appropriate, as it reflected these constraints, precluded intense residential development, and ensured that future development would be compatible with the very low density rural character of the surrounding area. The proposed Santa Felicia SEA was only one of several constraints observed, and the proposed RL20 land use designation is not dependent on the proposed SEA. See Figure 2.0-4, Proposed Land Use Policy Map in the Revised Draft EIR, which depicts the proposed RL20 land use designation follows property boundary lines, not watershed boundaries, which provide the boundaries of the proposed Santa Felicia SEA. Furthermore, the Revised Draft EIR addressed all of the environmental impacts of the proposed changes to land uses. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 6

The commenter expresses the opinion that the proposed RL20 land use designation makes development of the commenter's property economically unviable.

The commenter is directed to **Response 1** and **Response 5**, above. Also, impacts that are solely economic in nature are not a significant environmental impact that needs to be addressed in an EIR. [California Public Resources Code section 21080(e)(2)]. The comment regarding impacts on the alleged impacts on the economic of developing the property however, will be included as part of the record and made available

to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 7

The comment states that the eastern boundary of the proposed Santa Felicia SEA follows a predominant ridgeline but the use of this ridgeline in establishing the proposed SEA's eastern boundary is completely arbitrary.

A predominate ridgeline was not the basis for the eastern boundary of the proposed Santa Felicia SEA, as alleged by the commenter. The proposed Santa Felicia SEA boundaries generally follow the boundary lines of the sub-watershed for the Santa Felicia Creek and tributaries. Watershed boundaries have been used to designate SEA boundaries throughout the County because watershed boundaries are geographical features which have a direct effect on biological resources. In establishing the boundaries for the proposed Santa Felicia SEA, County staff also used aerial photographs to review vegetation. In reviewing aerial photographs, County staff determined that stands of coast live oak, coast live oak riparian forest, alluvial fan sage scrub, and native grassland comprise a part of the area included in the proposed Santa Felicia SEA. Furthermore, County staff used records and any studies prepared for sensitive species in the area, which provided further documentation for establishing the boundaries of the proposed Santa Felicia SEA. Please see **Response 2** and **Response 3**, above, for more information on the proposed Santa Felicia SEA and its description in the Revised Draft EIR.

The commenter also raises the issue of the proposed RL20 land use designation. As mentioned in **Response 1** and **Response 5**, above, the proposed RL20 land use designation is not confined to the boundary of the proposed Santa Felicia SEA and it extends to the east and south of the referenced ridgeline. The proposed Santa Felicia SEA was only one of several constraints observed on the Lechler Family Trust properties and the surrounding properties, and the proposed RL20 land use designation is not dependent on the proposed SEA.

Response 8

The commenter questions why the Lake Piru watershed is more ecologically sensitive than the Santa Clara River watershed.

The Lake Piru watershed is not more ecologically sensitive than the Santa Clara River watershed. In fact, as is pointed out by the commenter, the Lake Piru watershed is a sub-watershed of the Santa Clara River watershed. Many proposed SEA boundaries throughout the County are based on watershed boundaries because they are biologically functional areas. The County has determined that the proposed Santa Felicia SEA should not be extended to the south as part of the existing Santa Clara River SEA or the proposed

Santa Clara River SEA, as suggested by the commenter, because the connection of the Piru watershed to the Santa Clara River occurs in Ventura County. Please see Revised Draft EIR, Section 3.7, Biological Resources, page 3.7-16, which describes the existing Santa Clara River SEA, and also pages 3.7-26 to 3.7-36, which describe the proposed Santa Clara River SEA. Please also see **Response 7** regarding the boundaries of the proposed Santa Felicia SEA.

Response 9

The commenter indicates that the Revised Draft EIR and proposed Area Plan failed to identify the reason for the proposed RL20 designation for the Santa Felicia SEA.

The commenter raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the commenter is referred to **Response 1**, **Response 4**, **Response 5**, and **Response 7**, above.

Response 10

The commenter states that the land use allowances under the Newman [Newhall] Ranch Specific Plan demonstrate that biological resources can be protected while still allowing development. The commenter also states that the commenter's property and the Newhall Ranch property have the same developmental constraints.

It is unknown if the commenter's property has the same constraints as the Newhall Ranch property, as over 15 years of biological surveys of Newhall Ranch property have been prepared and the commenter has provided no information of what biological resources may or may not be present on the commenter's property. Therefore, the County has no basis to know whether the commenter has prepared the biological studies necessary to determine whether sensitive biological resources exist on the commenter's property. In accordance with the SEATAC Guidelines, Newhall Land has prepared the numerous biological studies necessary to determine the actual area of SEA 23 that bisects the Newhall Ranch property (see **Response 3** above). In addition, the County has not received any development application for the commenter's properties. Just as the Newhall Land, the property owners of Newhall Ranch, requested that the County evaluate their development application for discretionary approval, the owners of the referenced properties may submit a development application for consideration and discretionary approval.

Response 11

The comment states that the proposed land use designation of RL20 within the proposed Santa is unfair when compared to proposed land use designations within other SEAs.

The comment only expresses the opinions of the commenter. The proposed RL20 land use designation is not confined or restricted to the proposed Santa Felicia SEA. The commenter is referred to **Response 1**, **Response 4**, **Response 5**, and **Response 7**, above. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 12

The commenter believes that the proposed Santa Felicia SEA designation is unfair, will be an unfair burden, and should be removed until such time that the County has real data regarding the ecological features of the property.

The comment only expresses the opinions of the commenter and does not provide evidence to substantiate the opinion. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.



Alex DeGood
Direct: (310) 201-3540
Fax: (310) 712-3348
AMD@jmbm.com

1900 Avenue of the Stars, 7th Floor
Los Angeles, California 90067-4308
(310) 203-8080 (310) 203-0567 Fax
www.jmbm.com

Ref: 69266-0003

January 24, 2011

VIA EMAIL

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, CA 90012

Re: Project No. R2007-01226-(5)
Plan Amendment Case No. 200900006-(5)
Zone Change Case No. 200900009-(5)
Environmental Assessment Case No. 200900080-(5)
State Clearinghouse No. 2008071119

Dear Mr. Glaser:

This office represents iStar Financial, Inc., the owner of Los Valles Company, L.P ("Los Valles"). Los Valles is the owner of an approximately 427 acre development in the Castaic area of the County of Los Angeles that is entitled for single family residential use. I write to offer supporting comments on the Santa Clarita Valley Plan Update (the "Plan") and the related recirculated draft environmental impact report ("RDEIR") on behalf of Los Valles. The Los Valles property is in an area in which a land use designation change is proposed, and as such Los Valles has reviewed the Plan and RDEIR with great interest.

Los Valles believes that the Plan has deftly executed a major, much needed update to the County's existing General Plan. Years of growth and development have rendered current land use designations and related zoning obsolete in many areas.

Of particular note, Los Valles believes that the Residential 2 (H2) land use designation, which allows up to two dwelling units per acre in areas that serve as transitions between higher density urban development and rural communities, is well suited for many areas previously deemed rural. This designation would apply to the Los Valles property, and would provide opportunities for sensible development that maintains appropriate density while protecting valuable open space.

In short, Los Valles supports the Plan and looks forward to its enactment.

1

Mr. Mitch Glaser
January 24, 2011
Page 2

Please provide the undersigned with notice of future hearings and developments related to the Plan and the RDEIR.

1

Sincerely,



ALEX DEGOOD of
Jeffer Mangels Butler & Mitchell LLP

Courtesy Copy: Richard Bruckner, Director of Regional Planning

cc: Steven Magee
Steve Wylder
Scott Ouellette

7520208v2

JMBM | Jeffer Mangels
Butler & Mitchell LLP

Letter No. D87

Letter from JMBM, January 24, 2011

Response 1

The commenter states that iStar Financial, Inc., owner of an approximately 427-acre development in the Castaic area, offers support for the proposed Area Plan and the related Recirculated Draft Environmental Impact Report. The commenter states that the proposed Area Plan's Residential 2 (H2) land use designation, which would apply to iStar Financial, Inc.'s aforementioned development, is well suited for many areas previously deemed rural.

The comment raises issues pertaining to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/6

FAX COVER SHEET

Date: January 24, 2011

Number of pages: 6, (including cover page)

Attn: Mitch Glaser

Fax: 213-626-0434

Re: Letters opposing Sloan Canyon Rd reclassification

1

From: Jean Cloyd

Fax: 661-257-6380

Letter No. D88

Letter from Jean Cloyd, January 24, 2011

Response 1

The commenter submits correspondence opposing the Sloan Canyon Road reclassification. The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR and is prefatory to **Letters No. D88a** through **No. D88e**, which follow.

January 17, 2011

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

1

Thank you,

Respectfully,



Don Silva
30036 SHARP Rd
CASTAIC, CA 91384
Phone: 661-257-4126

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Edel Vizcarra, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D88a

Letter from Don Silva, January 17, 2011

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

3/6

January 17, 2011

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

1

Thank you,

Respectfully,



JACOB JOSEPHSEN
30036 SHARP RD
CASTAIC
Phone: 661-257-4156

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Edel Vizcarra, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D88b

Letter from Jacob Josephsen, January 17, 2011

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

4/6

January 17, 2011

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

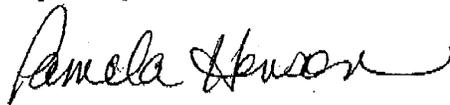
I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

1

Thank you,

Respectfully,



PAMELA HENSON
30036 SHARP RD
CASTAIC, CA 91384
Phone: 661-267-4156

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Edel Vizcarra, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D88c

Letter from Pamela Henson, January 17, 2011

Response 1

The commenter expresses her opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

5/6

January 17, 2011

Mr. Mitch Glaser
Department of Regional Planning
County of Los Angeles
320 W. Temple Street
Los Angeles, Ca 90012

Re: 2010 OVOV

Dear Mr. Mitch Glaser,

I am writing in opposition to the proposed change of Sloan Canyon Road from Hillcrest Parkway to Quail Valley Road and removal of the planned Limited Secondary Highway.

Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades and it would be great if we could use it. It is the connection for the north and south communities of Castaic. It was meant to provide area wide circulation for emergency access and convenience. Those who are supporting the change do not speak for the whole community. Our Regional Planners saw the needs of our community 50+ years ago. Please keep this Limited Secondary Highway designation in place and such an important community benefit should be incorporated back into the Castaic Bridge and Thoroughfare District.

1

Thank you,

Respectfully,



JERRY LUCAS
30120 HASLEY CANYON RD.
CASTAIC CA 91384
Phone: (661) 645-4911

cc: Michael D. Antonovich, Los Angeles County Supervisor
Pat Modugno, Planning Commissioner
Edel Vizcarra, Planning Deputy to Supervisor Antonovich
Rosalind Wayman, Senior Deputy to Supervisor Antonovich

Letter No. D88d

Letter from Jerry Lucas, January 17, 2011

Response 1

The commenter expresses his opposition to the proposed removal of the Limited Secondary Highway designation on Sloan Canyon Road. The commenter states that Sloan Canyon Road has been on the L.A. County maps as a Secondary Highway for decades, is the connection for the north and south communities of Castaic, and was meant to provide area wide circulation for emergency access and convenience.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comments regarding area wide circulation and emergency access only express the opinions of the commenter. The comments will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comments do not raise an environmental issue, no further response is required.

Nonetheless, the following information is provided. If the Limited Secondary Highway designation of Sloan Canyon Road north of Hillcrest Parkway were to be removed, Sloan Canyon Road north of Hillcrest Parkway would be considered a local street. The proposed Area Plan's Circulation Element describes local streets as follows: "streets designed for full access and limited mobility, and may include residential streets, private streets, service roads, and public alleys. For the purposes of circulation planning at the General Plan level, local streets are not included on the adopted Highway Plan." The Castaic Area Community Standards District (CSD), adopted by the Board of Supervisors on November 30, 2004, includes standards for local streets (see Section 22.44.137.D.2 of the County Zoning Ordinance). These standards apply to "residential land divisions where at least 75 percent of the lots exceed a net area of 15,000 square feet...*as approved by the county department of public works and the county fire department*" (emphasis added). These standards specify that "(c)urbs, gutters, and sidewalks are prohibited *unless otherwise deemed necessary for public safety purposes*" (emphasis added) and that "(i)nverted shoulder cross-sections shall be required *unless an alternate design is deemed necessary for public safety*" (emphasis added). Accordingly, the CSD standards for local streets provide for consideration of public safety concerns, such as emergency access and safe pedestrian access, and also provide for review and approval by the County's Department of Public Works and the County's Fire Department.

6/6

December 30, 2010

Supervisor Michael D. Antonovich
County of Los Angeles, Fifth District
500 West Temple Street
Los Angeles, Ca 90012

Dear Supervisor Michael D. Antonovich,

I am writing to support the Lombardi High School site as the site for the proposed Castaic Area High School. This is the site that should have been presented by our Castaic Area Town Council Representatives to the William S. Hart Union High School District instead of the Rasmussen site.

The proposed Lombardi High School site is the far superior site. This site would provide multiple accesses in and out of the East and West parking lots, disbursing traffic so that it flows more efficient. The location of the property at a lower elevation reduces impacts to significant ridgelines and brings the school site closer to existing housing tracts and our students would be able to walk and bike to school through access provided by Sloan Canyon Road from the North and South.

* Sloan Canyon Road is our designated Limited Secondary Highway, which the community needs to use from the South and North and can be easily upgraded because hundreds of feet of pavement currently existing. Use of the Lombardi High School site with Sloan Canyon Road access from the North and South would greatly reduce vehicle miles traveled, thus reducing Greenhouse Gas Emissions, to achieve a level consistent with the requirements of State Law. The proposed Lombardi High School site is what we have been waiting for and what we deserve.

1

2

Thank you,
Respectfully,

THOMAS CABSAIR
30911 ROMERO CANYON RD.
CASTAIC 91384
Phone: 661-295-0209

- cc: Wm. S. Hart Union High School District Board Members
LA County Supervisors, First, Second, Third and Fourth Districts
Pat Modugno, Planning Commissioner
Rosalind Wayman, Senior Deputy to Supervisor Antonovich
Mitch Glaser, Dept. of Regional Planning
Steve Burger, Dept. of Regional Planning

Letter No. D88e

Letter from Thomas Caesar, December 30, 2010

Response 1

The commenter supports the Lombardi High School site as the site for the proposed Castaic Area High School.

The comment is noted. No further response is required given that the comment addresses the Lombardi High School site and does not address or question the content of the Revised Draft EIR.

Response 2

The commenter states that Sloan Canyon Road is a designated Limited Secondary Highway, which the community needs to use to travel from south to north and can be easily upgraded.

The comment raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment and only express the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that use of the Lombardi High School site for the proposed Castaic Area High School, with access from Sloan Canyon Road, will greatly reduce vehicle miles traveled and greenhouse gas emissions. The commenter reiterates his support for the Lombardi High School site.

The comment is noted. No further response is required given that the comment addresses the Lombardi High School site and does not address or question the content of the Revised Draft EIR.

1/2

January 24,2011

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Dear Mr. Glaser:

Please submit the following comments regarding the Los Angeles County Area Plan to the planning commission members.

1

One Valley One Vision EIR – Air Quality - City of Santa Clarita and County of Los Angeles

The EIR for the City of Santa Clarita General Plan and the County Area Plan used an air quality model called URBEMIS2007. This is a 2007 model and does not include new regulations, such as SB375 and the new Title 24 Building Energy Efficiency Standards.

2

The staff report states that the EIR identifies an increase in selected emissions with the buildout of the OVOV plan. It than states that some emissions would be reduced through the build out of the plan.

3

We are in a nonattainment area for ozone. In a rating from marginal to extreme we were rated severe. How did we get to be rated as extreme?

4

Air Quality Management Plan 3.3 Air Quality, Page 30 under SCAQMD Air Quality Management Plan, bottom of the page

As part of the 2007 AQMP, the SCAQMD requested US EPA’s approval of a “bump-up” to the “extreme” nonattainment classification for the basin, which would extend the attainment date to 2024 and allow the attainment demonstration to rely on emission reductions from measures that anticipate the development of new technologies or improvement of existing control technologies. The US EPA approved the voluntary extreme nonattainment redesignation request on April 15,2010. This “bump-up” applies to ozone only.

5

The attainment date for PM25 is much earlier then the 2024 extended date for the ozone extreme designation. The plans are still being processed with the US EPA. The 36000 approved but not built units in the Los Angeles County area plan will be the main source of this problem. Those units include Newhall Ranch which is the largest urban sprawl area in the state.

The same Air Quality report is in the county area plan that is in the City of Santa Clarita General Plan as part of the One Valley One Vision plan.

6

Both EIR reports have the same conclusion “Potential air quality impacts from implementation of the proposed General Plan and Area Plan would remain potentially significant after the implementation of mitigation measures”.

How can one area, the City of Santa Clarita that is increasing density and Los Angeles County that states they is reducing density have the same result in the EIR?

7

The only thing that has been done is to allow the ozone in our air quality to increase from a level of severe to extreme. Now the community has an ozone level that can go to extreme and a longer time for it to remain at that level.

8

No air quality rights should be allowed. This has been done by the City of Santa Clarita in the past. It should not be allowed in the City of Santa Clarita General Plan or Los Angeles County area plan

9

GLOBAL WARMING AND CLIMATE CHANGE

EIR 3.4 County of Los Angeles Area Plan, page 32 In January 2007, the Los Angeles County Board of Supervisors adopted the Countywide Energy and Environmental Policy with guidelines for sustainability and green building design within County departments. The Policy also incorporated a sustainable building program into County capital improvement projects and seeks to integrate energy efficient and sustainable designs into future County building plans.

10

The City of Santa Clarita General Plan proposes to increase the amount of residential units and this increase in residential density will be abated by the reduction of units and sprawl in rural areas surrounding the City which means the County. They state that this increase in residential units helps them meet the objectives of SB 375, the anti –sprawl bill.

11

Unfortunately both the County of Los Angeles and City of Santa Clarita result under Significance of Impact Mitigation Framework page 139 in the county and page 142 in the city conclusion state the same thing. “Based on the above quantitative analysis, the OVOV proposed Area Plan and General Plan could potentially impede or conflict with the State’s goal of meeting AB32 given the increase in GHG emissions”.

12

Fact, the only way to reduce Green House Gas emission and clean up our air so people can live a health and safe life in the Santa Clarita Valley is to reduce the density in both the City of Santa Clarits General Plan and the Los Angeles County Area Plan

13

Growth estimates have already been included in the EIR process and as stated in the Impact Mitigation these plans could potentially impede or conflict with the State’s goal of meeting AB32 given the increase in GHG emissions.

Cam Noltemeyer
25936 Sardinia Court
Valencia, CA 90355

Letter No. D89

Letter from Cam Noltemeyer, January 24, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The comment states that the Revised Draft EIR used URBEMIS2007, which does not take into consideration new regulations such as SB 375 and the Title 24 Building Energy Standards. SB 375 and Title 24 regulations are considered in Section 3.4, Global Climate Change of the Revised Draft EIR.

Response 3

The comment restates information contained Section 3.3, Air Quality, in the Revised Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 4

The comment questions how the south coast Air Basin's rating of "extreme" for ozone non-attainment was arrived at, when it was originally rated "severe" a lower ranking. As explained in the Revised Draft EIR:

"[T]he SCAQMD [South Coast Air Quality Management District] requested US EPA's approval of a voluntary 'bump-up' to the 'extreme' nonattainment classification for the Basin even though its design value was less than 0.187 ppm [which would ordinarily result in a 'severe' rating] This [bump-up] would allow for the attainment demonstration to rely on emission reduction from measures that anticipate the development of new technologies or improvement of existing control technologies. A voluntary bump-up is permissible under the CAA [Clean Air Act] and means that the SCAQMD is required to impose more string control measures and regulations consistent with the extreme classification." (Revised EIR, page 3.3-23.).

Please see **Letter E11, State of California, Department of Justice, Response 4** and **Letter E1, SCOPE, Responses 49, 50 and 51** for additional responses to concerns regarding ozone.

Response 5

The comment restates information contained in the Revised Draft EIR and provides for opinion and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 6

The comment restates information contained in the Revised Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 7

The comment asks how the Draft EIR for the City's proposed General Plan and the Revised Draft EIR for the County's proposed Area Plan can reach the same conclusions (concerning air quality) when the City's proposed General Plan proposes to increase density and the County's proposed Area Plan proposes to reduce density. As noted on page 3.3-74:

"The proposed goals, objectives, and policies would reduce mobile and stationary source emissions of pollutants that currently exceed state and/or federal standards, and for which the project region is nonattainment. However, individual project emissions could potentially exceed the thresholds."

As discussed in Revised Draft EIR Section 3.3, Air Quality, page 3.3-1:

"The air quality analysis is a regional analysis for the OVOV Planning Area. The County and City Planning Areas together comprise the OVOV Planning Area. The County's Planning Area consists of the unincorporated land outside of the City's boundaries and the City's adopted Sphere of Influence (SOI) but within the OVOV Planning Area boundaries. The City's Planning Area consists of its incorporated boundaries and adopted SOI. The impact analysis evaluates the proposed Area Plan policies and proposed General Plan goals, objectives, and policies for their effectiveness in reducing potential air quality impacts. While the policies would reduce air pollutant emissions, the potential for impacts on air quality from implementation of the proposed Area Plan and General Plan would remain significant and unavoidable. Impacts would be considered potentially significant and mitigation measures are required. Nonetheless, after mitigation, impacts to air quality are potentially significant and unavoidable."

Response 8

The comment states that the only thing that has been done is to allow ozone to increase from severe to extreme and now the community has a longer time for it to remain at that level. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 9

The comment states that no air quality rights should be allowed.

The SCAQMD adopted the Regional Clean Air Incentives Market (RECLAIM) in October 1993. RECLAIM is a federally-approved regional cap and trade program created to reduce urban air pollution. RECLAIM was adopted through a public process, and public workshops to design the program began in October 1990. Advisory and steering committees included representatives from government agencies, public health organizations, and research and financial organizations, and associated working groups included industries, environmental groups, the California Air Resources Board (CARB), and the U.S. EPA. Three years later, on October 15, 1993, the RECLAIM program was adopted, with implementation beginning on January 1, 1994. The U.S. EPA approved the RECLAIM program through the California State Implementation Plan (SIP). Pursuant to SCAQMD Rule 2001, facilities that are admitted to RECLAIM may not opt out. Accordingly, the County cannot prohibit such credits.

Response 10

The comment restates information contained in Section 3.4, Global Climate Change, page 3.4-32, of the Revised Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 11

The comment restates information contained in the City's proposed General Plan and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 12

The comment restates information contained in the County's Revised Draft EIR for its proposed Area Plan and City's Draft EIR for its proposed General Plan and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 13

The comment states that the only way to reduce air quality impacts is to reduce density in both the County of Los Angeles and the City of Santa Clarita. The comment only expresses the opinions of the commenter. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

1/1

Susan M. Carey, Esq.
27143 Crystal Springs Road
Canyon Country, CA 91387

January 24, 2011

Mr. Mitch Glaser
Supervising Regional Planner
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

RE: Additional Comments on Los Angeles County OVOV Draft Program EIR

Dear Mr. Glaser:

I have the following additional comments on the EIR that I would like addressed in the next draft of the EIR:

1

I believe many significant comments of the Department of Justice, State of California, in its letter of December 1, 2009 regarding a previous draft of the EIR, have not been addressed in the current EIR and remain applicable to the current EIR. Specifically, the 3 paragraphs in that letter starting with the 3rd full paragraph on Page 2 point out deficiencies in the EIR that remain in the current draft. These are:

2

The findings of non-significance for so many impact areas which renders the DEIR deficient as a substantive document in that it fails to recommend and analyze the effectiveness of all feasible measures to mitigate adverse environmental effect as required by CEQA.

Mitigation measures tend to be voluntary and unenforceable, merely requiring that mitigation be encouraged or promoted, and not required.

3

The DEIR does not adequately analyze alternatives to the proposed Plan, as CEQA requires. The Preservation Corridor Alternative, identified by the DEIR as environmentally superior, is dismissed but is not shown to be infeasible. The DEIR rejects it on grounds that it would be less effective than the proposed Plan for meeting 3 of the Goals, but does not provide full consideration of Alternative 2 as required by CEQA and substantial evidence supporting its rejection.

4

Cumulative impacts of the Plan considered with impacts for development in the remainder of the North County subregion are not adequately explored. The DEIR notably fails to analyze the effects on growth in the Antelope Valley when considered cumulatively with growth expected from the Plan in the SCV, which is in contravention to CEQA requirements regarding analysis of cumulative impacts.

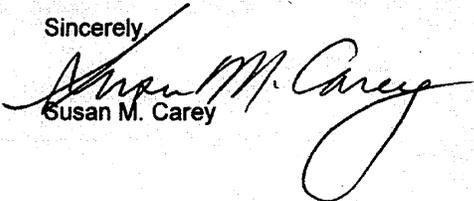
5

(Relevant citations for each of these issues are provided in the DOJ letter.)

In the Alternatives section of the EIR, in Table 6.0-1, there appears to be an error in the first row titled Rural Land, last column (titled Change in Acres), the number 8913 should be a negative number as the number of rural acres is reduced under the Plan.

6

Sincerely,


Susan M. Carey

Letter No. D90

Letter from Susan Carey, January 24, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The comment states that there are findings of no significance for so many areas of the Revised Draft EIR and that it fails to evaluate the effectiveness of all mitigation measures to mitigate adverse impacts.

The commenter fails to identify any specific mitigation measures that it believes are feasible and not included in the Revised Draft EIR, or which findings of no significance in the Revised Draft EIR are incorrect, so a more specific response cannot be provided. That being said, the commenter cites a statement made in a letter from the State of California Department of Justice, dated December 1, 2009, regarding findings of no significance. It should be noted that the aforementioned letter is commenting on the County's initial Draft EIR, released for public review in September 2009, and not the County's Revised Draft EIR, released for public review in November 2010. The Revised Draft EIR, having been revised, makes fewer findings of no significance than did the initial Draft EIR. For example, the Revised Draft EIR found that Air Quality, Global Climate Change and Transportation and Circulation were significant, whereas the initial Draft EIR did not. In any event, the commenter fails to identify which findings of no significance in the Revised Draft EIR are incorrect, so a more specific response cannot be provided.

Response 3

The comment states that the mitigation measures in the Revised Draft EIR tend to be voluntary and unenforceable, merely requiring that mitigation be encouraged but not required.

The County disagrees that all policies following the principles do not have mandatory language. A very large and significant number of the proposed Area Plan policies include mandatory language, whereas a number of policies intentionally do not have mandatory language, as some policies may not be appropriate or feasible in all instances, given the great diversity of communities (both urban and rural) and development types within the unincorporated Santa Clarita Valley. The proposed Area Plan's guiding principles provide guiding directives for numerous policies within each Element of the proposed Area Plan. The policies within Element are worded to mandate or provide direction to the specific implementing ordinances or to provide detailed requirements applicable to individual development proposals. The proposed Area Plan policies are balanced between mandating critical imperatives and providing guidance for areas requiring flexibility at the level of an Area Plan for a large and diverse planning area like the unincorporated Santa Clarita Valley.

Response 4

The comment states that the Revised Draft EIR has improperly rejected the environmentally superior alternative (i.e., Alternative 2 - Preservation Corridor Alternative), and failed to provide substantial evidence supporting its conclusion. The comment also states that the Revised Draft EIR failed to show that Alternative 2 was infeasible.

As explained in the Revised Draft EIR, Alternative 2 is superior to the proposed Area Plan from an environmental perspective. (Revised Draft EIR, p. 6.0-44.) However, Section 6.0 of the Revised Draft EIR further found that Alternative 2 does not satisfy all of the project objectives. (Revised Draft EIR, p. 6.0-44.) “For example, because this alternative would result in a reduced population and a decrease in the number of housing units, it would be less effective at achieving goals 14, 17, and 29 when compared to the proposed [Area Plan].” (Revised Draft EIR, p. 6.0-44.) Therefore, contrary to the comment, the Revised Draft EIR provided an adequate basis for preliminarily rejecting Alternative 2 from further consideration.

For background purposes, Alternative 2 would result in less buildable area than the proposed Area Plan: “[A] total of 597 dwelling units would be allowed on the 5,967.5 acres within the boundary of the proposed Preservation Corridor under Alternative 2, instead of a total of 2,761 dwelling units under the proposed Area Plan.” (Revised Draft EIR, p. 6.0-21.) In other words, Alternative 2 would provide 2,164 fewer dwelling units than the proposed Area Plan and accommodate 7,055 less residents than the proposed Area Plan. (Revised Draft EIR, p. 6.0-31.) This difference is not inconsequential given the County’s need to accommodate long-term growth projections within its jurisdictional areas.

Additional information regarding population projections for the Santa Clarita Valley is also provided in Section 3.19, Population and Housing, of the Revised Draft EIR:

“According to [the Southern California Association of Government’s (SCAG)] Growth Forecast, the population of the entire unincorporated subregion is expected to grow from 132,797 residents in the year 2005 to 434,773 residents in the year 2035 ...” (Revised Draft EIR, p. 3.19-3.)

“In 2008, the population of the County’s Planning Area was approximately 75,000 residents. Buildout of the proposed Area Plan Land Use Map would increase the County Planning Area’s population by 162,387 residents to a total population of approximately 237,387 residents.” (Revised Draft EIR, p. 3.19-5.)

“SCAG projects that the population of the unincorporated North Los Angeles County subregion, which includes unincorporated portions of the Santa Clarita Valley as well as unincorporated areas of the Antelope Valley, will increase from 132,797 residents in year 2005 to 434,773 residents in year 2035, for a total increase of 301,975 residents (no population projections from SCAG are presently available for this region after year 2035). Accordingly, SCAG projects substantial population growth (over 227 percent)

throughout unincorporated North Los Angeles County during the current planning period. Since buildout of the proposed Area Plan would increase the population of the unincorporated Santa Clarita Valley by 162,387 residents by year 2035, and given that the population of the entire unincorporated North Los Angeles subregion is projected to increase by 301,976 residents by 2035, implementation of the proposed Area Plan would account for approximately 54 percent of this growth.” (Revised Draft EIR, p. 3.19-6.)

As indicated by the above excerpts, the level of population growth contemplated by the proposed Area Plan is generally consistent with SCAG’s regional projections and is required to accommodate long-term growth trends anticipated in the unincorporated North County subregion, which includes the unincorporated Santa Clarita Valley and the unincorporated Antelope Valley. As indicated in the above excerpts, the population growth projected in the unincorporated Santa Clarita Valley represents only 54 percent of the population growth projected by SCAG in the North County subregion.

As indicated above, this overall reduction in total dwelling units and resident population is inconsistent with the following objectives of the proposed Area Plan:

14. Valley communities shall contain a mix of uses that support the basic needs of residents—places to live, shop, recreate, meet/socialize, and enjoy the environmental setting—that are appropriate and consistent with their community character. Regionally oriented uses that serve residents of the entire Valley or export goods and services may be concentrated in key business centers rather than uniformly dispersed throughout the Valley communities.
17. The Valley is committed to providing affordable work force housing to meet the needs of individuals employed in the Santa Clarita Valley.
29. Public infrastructure shall be improved, maintained, and expanded as needed to meet the needs of projected population and employment growth and contribute to the Valley’s quality of life.

(Revised Draft EIR, pp. 2.0-10 to -12.)

Response 5

The comment states that the cumulative impacts of the North County subregion are not taken into consideration from a cumulative perspective in the Revised Draft EIR. This assumption is incorrect. For example, all traffic trips, including those from outside of the Santa Clarita Valley, are a fundamental part of the traffic model. Please see Revised Draft EIR, Appendix 3.2 (One Valley One Vision Traffic Study, Austin Foust Inc., June 2010), Section 1.5, Reference: 3. “Draft Santa Clarita Valley Consolidated Traffic Model 2004 Update and Validation,” City of Santa Clarita and County of Los Angeles Department of Public Works, June 2004. This reference has been appended to the Revised Final EIR.

The commenter is referred to **Table 4-6, Freeway Volume Summary**, in Appendix 3.2 of the Revised Draft EIR, which is also provided below. Table 4-6 demonstrates how the number of vehicle trips increase in comparison to existing conditions. For example, on Interstate 5 (I-5) just north of the State Route 14 (SR-14) interchange during the AM Peak Hour, the northbound volume increases from 5,600 vehicles per hour (vph) today to 7,540 vph with buildout of the County's proposed Area Plan and the City's proposed General Plan, which were both developed as part of the joint "One Valley One Vision" (OVOV) planning effort. The northbound trips represent people entering the Santa Clarita Valley in the morning.

**Table 4-6
Freeway Volume Summary**

Segment	ADT	AM Peak Hour		PM Peak Hour	
		NB	SB	NB	SB
I-5 south of Parker Interchange					
Existing Conditions	110,000	1,860	2,190	3,570	3,070
Current GP	240,000	5,140	6,950	8,760	7,980
Proposed OVOV GP	239,000	4,090	6,770	8,770	7,640
I-5 south of Valencia Interchange					
Existing Conditions	179,000	5,430	5,310	6,050	6,420
Current GP	269,000	8,540	9,970	9,730	10,320
Proposed OVOV GP	259,000	7,860	8,200	9,190	10,300
I-5 north of SR-14 Interchange					
Existing Conditions	202,000	5,600	6,610	6,970	6,410
Current GP	308,000	8,710	10,430	10,530	10,800
Proposed OVOV GP	269,000	7,540	7,380	8,700	10,480
SR-14 south of Aqua Dulce Interchange					
Existing Conditions	110,000	1,970	5,580	5,130	2,810
Current GP	200,000	4,260	11,970	11,300	5,190
Proposed OVOV GP	158,000	2,700	11,780	10,590	3,350
SR-14 south of Sierra Highway Interchange					
Existing Conditions	152,000	2,510	7,090	7,500	3,380
Current GP	279,000	5,020	15,330	15,430	7,100
Proposed OVOV GP	217,000	3,900	14,350	13,580	5,150
SR-14 north of I-5 Interchange					
Existing Conditions	176,000	2,950	8,350	8,430	4,100
Current GP	316,000	6,320	16,170	16,250	8,490
Proposed OVOV GP	230,000	5,100	13,920	13,390	6,820

Consequently, the impacts of trips out of the Santa Clarita Valley are taken into consideration in the traffic analysis. As the traffic analysis numbers are used for the air quality and noise calculations, these environmental topical areas also inherently include the effects of the growth outside of the region.

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

It should be noted that the commenter refers to a statement made in a letter from the State of California Department of Justice, dated December 1, 2009, regarding cumulative impacts. The aforementioned letter is commenting on the County's initial Draft EIR, released for public review in September 2009, and not the County's Revised Draft EIR, released for public review in November 2010. The State of California Department of Justice subsequently sent another letter, dated March 17, 2011, which is commenting on the County's Revised Draft EIR. It should be noted that this letter does not reiterate the statement made regarding cumulative impacts in the earlier letter.

Response 6

The requested correction to Section 6.0, Alternatives, pages 6.0-9 of the Revised Draft EIR has been made. Please see the portion of the Revised Final EIR entitled, "Revised Draft EIR Pages," for the actual text revision.



CENTER for BIOLOGICAL DIVERSITY

January 24, 2011

Via Electronic and Certified Mail (with attachments)

Mr. Mitch Glaser
Supervising Regional Planner
Department of Regional Planning
Los Angeles County
320 West Temple Street
Los Angeles, CA 90012
ovov@planning.lacounty.gov

RE: Comments by Center for Biological Diversity on One Valley One Vision Area Plan and Recirculated Draft Environmental Impact Report

Dear Mr. Glaser:

These comments are submitted on behalf of the Center for Biological Diversity ("Center") on the One Valley One Vision Recirculated Draft Environmental Impact Report ("RDEIR") for the County of Los Angeles' Santa Clarita Valley Area Plan ("the Project").

1

As the future land-use planning document for the Santa Clarita Valley Area, area plan policies and land use determinations have profound implications for global warming. The California Air Resources Board has accurately called local governments "essential partners" in implementing Global Warming Solutions Act (AB 32).¹

2

¹ CARB, Climate Change Proposed Scoping Plan (Oct. 2008) 26-27.

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not only reduce greenhouse gas emissions but also reduce the cost of public services, improve public health, allow for streamlining of future environmental review through the method of tiering to a Program EIR (CEQA Guidelines §§ 15064(h)(3), 15183.5), and facilitate compliance with state greenhouse gas reduction requirements under AB 32 and Executive Order S-03-05.² Unfortunately, the Area Plan does not appear to take the obligation to reduce greenhouse gas emissions seriously because it is largely composed of aspirational measures and a land use pattern that further perpetuates the region's sprawl.

2

3

In addition, the RDEIR contains other defects that make it difficult to understand Project impacts, including a confusing and uninformative project description and a comparison of the Project to the current Area Plan rather than on-the-ground environmental conditions. The RDEIR's alternatives analysis is also inadequate. Not only is the range of alternatives improperly limited, but the environmentally superior alternative identified in the EIR, which would provide significant environmental benefits to biological resources for only a minor adjustment to the Project, was illogically and cursorily rejected.

4

5

6

We urge the County to remedy the RDEIR's defects and use this opportunity to develop a truly sustainable and forward-thinking vision for the Santa Clarita Valley.

7

I. The RDEIR Fails to Provide an Informative and Complete Project Description

An EIR cannot accurately assess project impacts if the project itself is not sufficiently described. Accordingly, "[a]n accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR." *San Joaquin Raptor v. County of Stanislaus*, 27 Cal.App.4th 713, 730 (1994). The RDEIR does not provide a meaningful and informative description of the Project. For example, because the RDEIR does not appear to provide data on what population projects are for the region, it is unclear whether the significant amount of development permitted by the Project is even necessary. It is also difficult to understand where, how much, and what type of development currently exists in comparison with what will be permitted under the Plan. The RDEIR's failure to clearly set forth this information precludes an informed understanding of how sprawl patterns of development might be reduced.

8

II. The RDEIR Fails to Apply the Proper Baseline From Which to Analyze Project Impacts

Contrary to CEQA, the RDEIR frequently fails to analyze project impacts as compared to existing environmental conditions. Instead, the RDEIR compares Project impacts to build-out under the existing Area Plan. As recently concluded by the Supreme Court in *Communities for a Better Env't v. South Coast Air Quality Management District*,

9

² See Anders et al, *Applying California's AB 32 Targets to the Regional Level: A Study of San Diego County Greenhouse Gases and Reduction Strategies*, 37 ENERGY POLICY 2831 (2009) ("Although the largest reductions are achieved through state mandates, all measures, including at the local level, will be required to achieve the AB 32 target.")

comparing a project to a hypothetical allowable condition rather than existing physical conditions “results in ‘illusory’ comparisons that ‘can only mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impact,’ a result at direct odds with CEQA’s intent.” (2010) 48 Cal.4th 310, 322 (citation omitted). As but one example of the RDEIR’s improper application of a CEQA baseline, the RDEIR compares total vehicle miles travelled (VMT) resulting from the Project with buildout of the existing area plan and City general plan rather than existing conditions. (RDEIR at 3.2-54.) This approach, which creates the misleading impression that the Project would reduce VMT, is flatly inconsistent with CEQA. A recirculated document should compare VMT from the Project with existing environmental conditions to provide an informative analysis of Project impacts.

9

Notably, the Air Resources Board has recently set per capita VMT reduction targets relative to 2005 levels for the Southern California region pursuant to SB 375. The RDEIR’s failure to provide basic information on current VMT in a straightforward manner and discuss consistency with SB 375 precludes informed decisionmaking and renders the RDEIR inadequate as an informational document. Indeed, given that the Project would increase trip ends by 121%, the Project would appear to lock in land uses that will undermine the ability of the region to meet SB 375 targets.

10

III. The RDEIR’s Analysis and Mitigation of Greenhouse Gas Impacts is Inadequate

According to the RDEIR, the Project would result in 1,848,400 tons of greenhouse gas pollution. The incredible increase in greenhouse gas emissions will significantly undermine California’s ability to reduce emissions from *existing* levels as called for under AB 32 and Executive Order S-3-05. Yet, rather than provide an informative framework to analyze the significance of Project greenhouse gas impacts and proposed specific and enforceable measures to minimize Project emissions, the RDEIR resorts to a vague and subjective comparison with mitigation measures proposed by other entities and discretionary and unenforceable mitigation measures. The RDEIR’s failure to properly analyze and mitigate the Project’s greenhouse gas impacts violates CEQA.

11

A. The RDEIR’s Significance Determination is Uninformative and Ignores Available Methodologies to Measure the Extent of Project Impacts

The EIR states that the Project would result in close to 2 million tons of greenhouse gas pollution yet makes no effort to express the extent to which adding this enormous quantify of emissions into the atmosphere would result in a significant impact. Rather, the EIR vaguely states that the Project “could potentially impede or conflict with the State’s goal of meeting AB 32 given the increase in GHG emissions,” that the Project would (inexplicably) “achieve reductions in GHG emissions from business-as-usual conditions” and that the “project would result in a potentially significant impact on global climate change.” (RDEIR at 3.4-139.)

12

Specific methods to express the significance of Project impacts are available to provide a much more informative analysis than provided in the RDEIR. For example, the Bay Area Air Quality Management District (BAAQMD) has developed a GHG-efficiency metric to enable comparisons of a proposed general plan with alternatives in order to determine if the proposed general plan meets AB 32 reduction goals.³ For 2020, emissions would be 6.6 metric tons per service population (population + employment). As noted by BAAQMD, because Executive Order S-3-05 establishes a more aggressive emissions reduction goal for the year 2050 of 80 percent below 1990 emission levels, the year 2020 should be viewed as a milestone year and not preclude the community toward a trajectory toward the 2050 goal. This guidance echoes that contained in the Attorney General’s FAQ on Climate Change and General Plans, which states that emissions targets in general plan updates should “align with an emissions trajectory that reflects aggressive GHG mitigation in the near term and California’s interim (2020) and long-term (2050) GHG emissions limits set forth in AB 32 and the Executive Order.”⁴ Notably, the BAAQMD per capita metric is based on statewide numbers and equally applicable to the Project. Thus, the most recent proposal by the South Coast Air Quality Management District (SCAQMD) uses the same 6.6 per capita standard developed by BAAQMD for general plans.⁵

13

To provide an informative analysis of the Project’s GHG impacts, please analyze Project emissions in the context of a per capita threshold for both 2020, and a more stringent 2030 threshold consistent with a 2050 emissions reduction trajectory. As currently set forth, the magnitude of Project impacts is impossible to determine. To assist in this analysis, various sources provide guidance on quantifying plan level emissions and reductions that can be assumed through implementation of Pavley and other statewide emission reduction measures.⁶ Once this analysis is completed, the RDEIR can more informatively examine what additional measures would move the Project closer to meeting future per capita community greenhouse gas targets.

B. Proposed Mitigation for the Project’s Greenhouse Gas Impacts is Vague, Unenforceable, and Improperly Deferred

While the RDEIR properly acknowledges that Project greenhouse gas impacts are significant, it fails to adopt all feasible mitigation and alternatives to minimize this impact as required under CEQA. Pub. Res. Code § 21002. Contrary to CEQA, mitigation for the full range of the Project’s greenhouse gas impacts is improperly vague, unenforceable and deferred. Rather than propose meaningful, specific and enforceable mitigation for the Project’s greenhouse gas impacts, the RDEIR is composed largely of hortatory measures. While the RDEIR asserts that the Project would be “consistent with project design features and mitigation measures recommended by CARB, OPR, the California Climate Action Team, and the Office of the Attorney General,” the vague and non-

14

³ BAAQMD, CEQA Guidelines Update, Proposed Thresholds of Significance (May 3, 2010) at 24-25.

⁴ Attorney General, Climate Change, the California Environmental Quality Act, and General Plan Updates: Straightforward Answers to Some Frequently Asked Questions (Mar. 2009) at 4.

⁵ SCAQMD, Greenhouse Gas Significance Threshold Stakeholder Working Group # 14, Nov. 19, 2009.

⁶ See, e.g. BAAQMD, GHG Plan Level Quantification Guidance (Apr. 2010).

binding character of the measures set forth in the RDEIR make a consistency determination an entirely subjective and meaningless exercise. Accordingly, as noted by the Attorney General in its FAQ on Climate Change and General Plans, “[w]hile a menu of hortatory GHG policies is positive, it does not count as adequate mitigation because there is no certainty that the policies will be implemented.”⁷

14

Because the vast majority of proposed policies are couched in “should,” “promote,” and “encourage” language, it is simply impossible to determine what, if anything, these policies would ultimately achieve. For example, Policy LU 7.1.2 would “Promote the use of solar panels and renewable energy sources in all projects.” Yet, this policy contains no specifics as to how this purported promotion of renewable energy use would occur. Would fees be waived, financial incentives be provided, renewable requirements be put in place for new residential and commercial development above a certain size? Absent specific policies, this measure is meaningless.

15

In addition, while the RDEIR states it will develop a Climate Action Plan, development is improperly deferred. Moreover, aside from required compliance with State law, there are no criteria set forth for what the future plan might look like and what measures might be included. Consideration of greenhouse gas impacts through a Climate Action Plan should be part of the RDEIR, not a post-decisional addendum. Indeed, in invalidating an EIR for improperly deferring mitigation of greenhouse gas impacts, the Court in *Communities For a Better Environment v. City of Richmond*, held that the “solution was not to defer the specification and adoption of mitigation measures until a year after Project approval; but, rather, to defer approval of the Project until proposed mitigation measures were fully developed, clearly defined, and made available to the public and interested agencies for review and comment.” 184 Cal.App.4th 70, 95.

16

The RDEIR also states it will “participate in the preparation of a regional Sustainable Communities Strategy (SCS) Plan to meet regional targets for greenhouse gas emissions reductions, as required by SB 375.” (RDEIR Appendix, Comparison of CAPCOA Greenhouse Gas Model Policies with One Valley One Vision at 4.) This commitment to “participate” in SCS development falls short for a number of reasons. First, an SCS only addresses transportation-related emissions. More importantly, adoption of the sprawl-like pattern of development proposed by the Project will undermine the ability of an SCS to achieve needed emission reduction goals, rendering any future participation by the County largely ineffectual. So as not to undermine the goals of SB 375, the County should either wait for preparation of the SCS to ensure the Project is aligned with the SCS, or the RDEIR must analyze how the Project would increase per capita VMT and examine alternatives, such as increased higher density mixed use development in infill areas, that more closely align with SB 375 targets.

17

C. The RDEIR Fails to Adopt Specific and Feasible Mitigation

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⁷ Attorney General, Climate Change, the California Environmental Quality Act, and General Plan Updates: Straightforward Answers to Some Frequently Asked Questions (Mar. 2009) at 5.

Specific quantifiable measures to reduce GHGs are set forth in CAPCOA's *Quantifying GHG Mitigation Measures*. Please consider adoption of these measures as requirements for new development and as part of programs to retrofit and reduce emissions from existing communities. In addition, please consider the following.

Measures to mitigate emissions from land use:

- Requiring a minimum number of units to be located in the downtown area. Stockton General Plan Settlement 2008. 18
- Providing incentives to promote infill development in the downtown area, including but not limited to: reduced impact fees, less restrictive height limits, less restrictive setback requirements, less restrictive parking requirements, subsidies, and a streamlined permitting process. Stockton General Plan Settlement 2008. 19
- Ensuring that development on the outskirts of the Area Plan does not grow in a manner that is out of balance with development of infill. Possible measures to achieve this objective are set forth in the AG Settlement with the City of Stockton. Stockton General Plan Settlement 2008. 20
- Altering fee structures to encourage infill and mixed use, discourage sprawl though increasing or reducing fees proportionally with distance from city center or preferred transit sites, increasing fields for greenfield sites, and increasing or reducing fees based on the degree to which mixed uses are incorporated into the project. The RDEIR appendix notes that these measures are identified by CAPCOA but no justification is given for their failure to be included in the Project. (RDEIR Appendix, Comparison of CAPCOA Greenhouse Gas Model Policies with One Valley One Vision at 22.) 21
- Introducing flexible parking requirements based on location, density and range of land use, accessibility to public transit and carsharing services, area walkability, and/or housing tenure (for more information, see <http://transtoolkit.mapc.org/Parking/Strategies/flexiblerequirements.htm>, <http://www.dca.state.ga.us/toolkit/ToolDetail.asp?GetTool=17>). 22
- Tactically crafting building height limitations. 23
- Rewarding density through bonus programs. 24
- Designing density guidelines for private and public spaces. 25
- Incentivizing redevelopment of underutilized areas, such as surface parking lots. 26

- Enabling prototype structures in neighborhood center zones that can be adapted to new uses over time. 27

- Allowing mixed use in commercial districts. 28

Measures to reduce energy consumption:

- Requiring that all new public buildings meet a minimum LEED Silver standard. *See Alameda County Administrative Code Chapter 4.38, requiring all new County projects meet a minimum LEED Silver rating.* 29

- Requiring that new residential and commercial development, as well as major remodels of homes and businesses, meet green building standards and/or are LEED Certified. 30

- Requiring that all new buildings exceed Title 24 energy standards by 25 percent. *See Town of Windsor Building and Housing Code Article 13, establishing green building standards and ratings for commercial and residential buildings.* 31

- Requiring building projects to recycle or reuse a minimum of 50 percent of unused or leftover building materials. *See Alameda County Administrative Code § 4.38.030.* 32

- Offering incentives to encourage green building standards and discourage business as usual construction. 33

- Providing information, marketing, training, and education to support green building. 34

- Requiring energy efficiency and water conservation upgrades to existing residential and non-residential buildings at the time of sale, remodel, or additions. Berkeley's Residential Energy Conservation Ordinance (RECO) is an example of such a measure. Berkeley's RECO, Berkeley Municipal Code Chapter 19.16. Under this ordinance, Berkeley establishes ten energy or water conservation measures that residential structures must incorporate. These include measures such as installing ceiling insulation, certain water efficiency technologies for shower fixtures and sink faucets, and weatherstripping on all exterior doors. Berkeley Municipal Code § 19.16.050(B). The ordinance requires the seller to certify that some of these measures have been met prior to the sale or exchange of any residential structure or unit. Berkeley Municipal Code § 19.16.050(A). Similarly, Berkeley's Commercial Buildings – Energy Conservation Measures requires commercial building owners to conduct an energy audit of their building prior to the sale or major renovation of the building and ensures that they have installed energy 35

conservation measures such as efficient heating, cooling, water, and lighting systems, among others. Berkeley Municipal Code Chapter 19.72.

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- Requiring new residential construction to meet specific energy efficiency standards that go beyond those mandated by California law. For example, the City of Rohnert Park recently enacted an ordinance establishing minimum energy efficiency standards for all new low-rise residential construction of any size, low-rise residential additions over a specific size threshold and all residential and non-residential swimming pools and water features. City of Rohnert Park Municipal Code Chapter 14 at § 14.01.010. The ordinance requires residential buildings to use Energy Star appliances and directs that new and expanded residential structures meet specific energy use standards. City of Rohnert Park Municipal Code Chapter 14 at §§ 14.02.050(A); 14.02.060.

36

- Requiring that all new buildings be constructed to allow for future installation of solar energy systems. In its Community Greenhouse Gas Reduction Plan, the City of Arcata recommended that it adopt such requirements. City of Arcata, Community Greenhouse Gas Reduction Plan (Aug. 2006). Additionally, Chula Vista’s Energy Conservation Regulations mandate that all new residential units include plumbing specifically designed to allow later installation of systems that will rely on solar energy as the primary method of heating domestic potable water Chula Vista Municipal Code § 20.04.030.

37

- Adopting and implementing a Heat Island Mitigation Plan that requires new residential buildings to have “cool roofs” with high or highest-commercially-available solar reflectance and thermal emittance characteristics. Research shows that “cool roofs” can reduce air-conditioning energy use between 10 and 50 percent. Akbari 2000. Concomitantly, the City can adopt a program of building permit enforcement for re-roofing to ensure compliance with existing state building code “cool roof” requirements for non-residential buildings.

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- Integrating renewable energy requirements into development and building standards, such as requiring onsite solar generation of electricity in new retail or commercial buildings and parking lots and garages (solar carports).

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- Adopting a resolution or ordinance that will require sources of renewable energy, such as installing solar photovoltaic systems to generate electricity for public buildings and operations,⁸ using methane to generate electricity

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⁸ Under the California Solar Initiative, the California Public Utilities Commission offers different incentives to government agencies, as well as private businesses and residents, for installing certain types of solar power systems. See California Public Utilities Commission, California Solar Initiative Program Handbook (Jan. 2008), available at <http://www.cpuc.ca.gov/puc/energy/solar/> (last visited June 1, 2009).

at wastewater treatment plants, and installing combined heat and power systems.	40
• Requiring new residential developments to participate in the California Energy Commission’s New Solar Homes Partnership and include onsite solar photovoltaic systems in at least 50% of residential units. <i>See</i> http://www.gosolarcalifornia.ca.gov/nshp/index.html ; <i>see also</i> California Public Utilities Commission, New Solar Homes Partnership Guidebook, Second Edition (July 2007).	41
• Using Geographical Information Systems (GIS) to map and assess local renewable resources, the electric and gas transmission and distribution system, community growth areas anticipated to require new energy services, and other data useful to the deployment of renewable technologies.	42
• Identifying possible sites for production of local renewable energy sources such as solar, wind, small hydro, biogas, and tidal; evaluating potential land use, environmental, economic, and other constraints affecting their development; and adopting measures to protect those resources, such as utility easements, rights-of-way, and land set-asides.	43
• Providing information, marketing, training and education to support renewable resource use.	44
Measures to reduce emissions from waste:	
• Implementing an environmentally preferred purchasing program which could include giving bid preferences to contractors and suppliers that meet established sustainability criteria. This is a policy several cities and counties are either considering or currently implementing. City of Sacramento 2007 at 12; City of Sacramento 2008 at 4.	45
• Establishing a program and system for reuse or recycling of construction and demolition materials for government and non-governmental construction projects.	46
• Requiring recycling in all government buildings and public schools.	47
• Implementing an organics and yard debris collection and composting program.	48
• Adopting policies, economic incentives, and rate structures for garbage so that recycling, reusing, and composting become cheaper than incinerating waste or sending it to a landfill.	49

Measures to reduce emissions from water consumption:

- Requiring new construction or users to offset demand so that there is no net increase in demand. 50
- Using reclaimed water for landscape irrigation in new developments and on public property and installing the infrastructure to deliver and use reclaimed water. 51
- Requiring buildings to be water-efficient and mandating water-efficient fixtures and appliances in all new development and government buildings. 52
- Requiring site-appropriate, drought-tolerant low water use, native landscaping and ultra-efficient irrigation systems where appropriate for all development applications and re-landscaping projects and limiting the amount of water intensive landscaping to reduce the amount of water needed for irrigation. 53

GHG Mitigation Fee for New Development:

A fair share mitigation fee can be imposed on new development to fund measures in the Climate Action Plan. This fee can allow projects to achieve carbon neutrality to address emissions that cannot be feasibly reduced on site. The Bay Area Air Quality Management District (BAAQMD) has developed guidance for local governments to develop an offsite mitigation program. (See BAAQMD, Guidance for Lead Agencies to Develop an Offsite Mitigation Program, available at <http://www.baaqmd.gov/Home/Divisions/Planning%20and%20Research/CEQA%20GUIDELINES/Tools%20and%20Methodology.aspx>) 54

IV. The RDEIR’s Alternatives Analysis is Fundamentally Flawed

A. The RDEIR Fails To Consider a Reasonable Range of Alternatives

Under CEQA, an EIR must consider and analyze a wide-range of alternatives to the project. “Without meaningful analysis of alternatives in the EIR, neither courts nor the public can fulfill their proper roles in the CEQA process.” *Laurel Heights Improvement Ass’n v. Regents of University of California*, 47 Cal.3d 376, 404 (1988). Accordingly, “[a] major function of an EIR ‘is to ensure that all reasonable alternatives to proposed projects are thoroughly assessed by the responsible official.’” *Save Round Valley Alliance v. County of Inyo*, 157 Cal.App.4th 1437, 1456 (2007) (citations omitted). Here, the RDEIR fails to present “a reasonable range of potentially feasible alternatives.” Guidelines § 15126.6(a). The RDEIR provides a very limited range of alternatives. Please include a city-centered alternative that maximizes infill opportunities and avoids sprawl development at the urban fringe. As the RDEIR currently stands, it is difficult even to understand the potential for increased development and density within existing communities and how this could function preserve the rural character of outlying areas. 55

This alternative could also consider a revenue sharing agreement between the City and County in exchange for the County giving the City control over city-centered development.

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Additionally, the County must consider alternatives that incorporate strict energy and water conservation measures, require green building practices and mixed-use development and places development near alternative transportation nodes. Such alternatives would result in a significant reduction in greenhouse gas emissions resulting from VMTs and energy consumption. It would also result in fewer greenhouse gas emissions from construction and development, as the County would not have to build new infrastructure throughout the unincorporated areas. These alternatives would meet the Project's basic goals and objectives.

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B. The RDEIR Improperly Rejects the Environmentally Superior Alternative

The RDEIR also improperly rejects the environmentally superior alternative. The Preservation Corridor Alternative would result in significant environmental benefits, particularly to biological resources, with nominal change to the Project. Yet, this alternative is inexplicably dismissed on the grounds that it is contrary to the Project objective of achieving a mix of uses. The RDEIR provides no explanation of how decreasing density in one small area of the Project interferes with the overall mix of uses proposed by the Project. (RDEIR at 6.0-31). Indeed, in this particular case, decreasing density to allow for the movement of wildlife would appear to further this same objective's goal of containing a mix of uses that allow residents to enjoy the environmental setting of the Project area. The RDEIR's nonsensical and unsupported rejection of the Preservation Corridor Alternatives violates CEQA. *See, e.g., Save Round Valley v. County of Inyo*, 157 Cal.App.4th 1437, 1465 (2007) (EIR fails as a matter of law where alternatives analysis "includes only barest of facts" and "vague and unsupported conclusions.").

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V. The RDEIR Must Be Redrafted and Recirculated

CEQA requires recirculation of a revised draft EIR "[w]hen significant new information is added to the environmental impact report" after public review and comment on the earlier draft DEIR." Pub. Res. Code § 21092.1. This includes the situation where, as here, "[t]he draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." Guidelines § 15088.5(b)(4). The opportunity for meaningful public review of significant new information is essential "to test, assess, and evaluate the data and make an informed judgment as to the validity of the conclusions to be drawn therefrom." *Sutter Sensible Planning, Inc. v. Sutter County Board of Supervisors*, 122 Cal.App.3d 813, 822 (1981); *City of San Jose v. Great Oaks Water Co.*, 192 Cal.App.3d 1005, 1017 (1987). An agency cannot simply release a draft report "that hedges on important environmental issues while deferring a more detailed analysis to the final [EIR] that is insulated from

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public review.” *Mountain Lion Coalition v. California Fish and Game Comm’n*, 214 Cal.App.3d 1043, 1053 (1989).

In order to cure the panoply of defects identified in this letter, the County will need to obtain substantial new information to assess the proposed Project’s environmental impacts adequately, and identify effective mitigation capable of alleviating the Project’s significant negative environmental impacts. CEQA requires that the public have a meaningful opportunity to review and comment upon this significant new information in the form of a recirculated draft EIR.

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CONCLUSION

Thank you for your consideration of these comments. We look forward to working with the City and County now and in the future to reach our shared goals of reducing greenhouse gas emissions and protecting biological diversity, public health, and our environment. If you have any questions, please contact Matt Vespa, mvespa@biologicaldiversity.org, (415) 436-9682 x309.

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Please ensure that we are notified of any future action on this Project.

60

Sincerely,



Matthew Vespa
Senior Attorney

Encl.: The following references are included in the accompanying CD for your review and inclusion in the administrative record.

ENCLOSED REFERENCES

- Exhibit A. Anders et al, *Applying California’s AB 32 Targets to the Regional Level: A Study of San Diego County Greenhouse Gases and Reduction Strategies*, 37 ENERGY POLICY 2831 (2009)
- Exhibit B. Attorney General, *Climate Change, the California Environmental Quality Act, and General Plan Updates: Straightforward Answers to Some Frequently Asked Questions* (Mar. 2009)
- Exhibit C. BAAQMD, *GHG Plan Level Quantification Guidance* (Apr. 2010)
- Exhibit D. BAAQMD, *CEQA Guidelines Update, Proposed Thresholds of Significance* (May 3, 2010)

- Exhibit E. BAAQMD, *Guidance for Lead Agencies to Develop an Offsite Mitigation Program* (2010)
- Exhibit F. CAPCOA, *Quantifying GHG Mitigation Measures* (2010)
- Exhibit G. SCAQMD, *Greenhouse Gas Significance Threshold Stakeholder Working Group # 14*, Nov. 19, 2009
- Exhibit H. *Stockton General Plan Settlement* 2008



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Communication

Applying California's AB 32 targets to the regional level: A study of San Diego County greenhouse gases and reduction strategies

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ABSTRACT

This paper presents a summary of a local effort in California to assess greenhouse gas (GHG) emissions and identify potential mitigation measures. Local policymakers in California already have been searching for ways to reduce GHG emissions but it was the California Global Warming Solutions Act of 2006 (AB 32), which seeks to reduce GHG emissions to 1990 levels by 2020, that has provided a framework for regions to evaluate their ability to reduce GHG emissions. We conducted a GHG inventory for the San Diego region from 1990 to 2006, with forecasts to 2020. The region emitted approximately 34 million metric tons of carbon dioxide equivalent (MMT CO₂E) in 2006 from anthropogenic sources, which represents a 17% increase over the 1990 level of 29 MMT CO₂E. Applying a combination of 21 existing or pending state GHG reduction mandates and feasible regional measures we show that the region could achieve the AB 32 target. Although the largest reductions are achieved through state mandates, all measures, including at the local level, will be required to achieve the AB 32 target. Thus local regions retain control over a fairly significant portion of reductions, and remain important actors in the implementation and compliance of state mandates.

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1. Introduction

National greenhouse gas (GHG) inventories have been conducted as a reporting requirement under the UN Framework Convention on Climate Change (UNFCCC), 1990. Forty-two US states have assessed their GHG emissions under the guidance of the US Environmental Protection Agency (EPA) to implement policies to reduce GHGs and develop state climate action plans. California has developed its state inventory from 1990 to 2004. Separately, a number of cities in California have carried out GHG inventories, at least for a limited number of years and emissions categories, in anticipation of regulations or to comply with voluntary commitments made under such agreements as the US Mayor's Climate Initiative. Once the California Global Warming Solutions Act (AB 32) was enacted in 2006 there has been an increasing need to assess GHGs at the regional level in order to understand the role that local jurisdiction can play to contribute to emissions reductions. There also are other reasons why regional inventories might be appropriate to GHG inventories in general, and San Diego County in particular. First, the Office of the Attorney General has filed several complaints with local California agencies

for the lack of or insufficiency of climate change assessments in planning documents under current environmental quality laws.¹ Second, the San Diego Association of Governments (SANDAG), which plays an important planning role not only in regional transportation but also in regional planning and energy use, will be the first regional metropolitan planning organization requested under newly adopted legislation (SB 375) to develop a regional GHG target and plan to reduce emissions associated with land use and transportation. A further reason for application of state targets to the region is that emissions models and data are often available at this level and, in particular for San Diego County, the political and geographical boundaries of the region coincide with the jurisdiction of the service (electricity and natural gas) utility.

¹ The California Attorney General's office (Attorney General) sued San Bernardino County (April 2007) for failure to assess the impacts on GHG emissions from its General Plan Amendment resulting in a Settlement for the County to carry out a GHG Reduction Plan. In other cases, settlements have been reached to conduct GHG reduction plans without litigation, such as with Conoco Phillips for its refinery expansion (September 2007), with Great Valley Ethanol for its corn-based ethanol facility (March 2008), with the Port of Los Angeles (December 2007) and with the San Diego Airport Authority (May 2008). The Office has also filed an amicus curiae brief supporting the South Coast Air Quality Management District against the California Public Utilities Commission against the importation of hot burning LNG into California (September 2008).

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We developed the first GHG inventory for San Diego County comprising 18 municipalities and the unincorporated parts of the County, using the detailed methods outlined by the International Panel for Climate Change (IPCC, 2006) and used by the California Air Resources Board (CARB) to conduct its statewide GHG inventory. Even though the AB 32 target does not apply specifically to local jurisdictions or regions, we use it as a framework to assess the impact of policy measures. This article summarizes the results of the GHG inventory for the region from 1990 to 2006 and projections through 2020. It also broadly assesses the GHG reductions possible through existing or pending state mandates, and provides a short discussion of the implications of regional action to contribute to achievement of GHG reductions required by state law.

A full presentation of this study will be submitted for publication later this year.

2. Methods

Our analysis estimated historical anthropogenic GHG emissions from 1990 to 2006 and projected future emissions through 2020 for 14 categories using the best available data. The 14 categories consisted of on-road transportation (according to vehicle category), electricity, natural gas end use, off-road vehicles and equipment (construction, mining, agricultural), industrial processes and products (mostly refrigerants), land development emissions (due to loss of vegetation), agriculture (enteric fermentation, manure), civil aviation (interstate, intrastate), waste (landfills, wastewater treatment), waterborne emissions (ocean-going vessels to 24 nautical miles, harbor craft), and other fuels (e.g., propane). We calculated and subtracted from the total the sequestration resulting from vegetation in undeveloped areas and included emissions due to wildfires, a common feature in San Diego County. To the extent possible, the methodologies² used to estimate regional emissions were identical to those used by the

² Global warming potentials used were the same as those used by CARB in the California state inventory (CARB, 1990–2004) and are taken from the IPCC Second Assessment Report 1996 as follows: CH₄: 21, N₂O: 310, HFC125: 2,800, HFC 134a: 1,300, HFC 143a: 3,800, SF₆: 23,900.

For on-road transportation, fuel consumption data was not available and was obtained from the EMFAC 2007 model (CARB, 2007) based on a carbon balance. The EMFAC output was converted to GHG emissions as follows: mass of CO₂ emission = ([EMFAC output CO₂ emission] + [EMFAC output CO emission] × [molecular weight ratio of CO₂ to CO]) + ([EMFAC output THC emission] × [molecular weight ratio of CO₂ to CH₄]); mass of N₂O emitted from gasoline = ([vehicle miles traveled] × (0.0318 × ([EMFAC output NO_x emission] / [vehicle miles traveled]) + 0.0167)); mass of N₂O emitted from distillate = [EMFAC output fuel combustion] × [fuel N₂O emission] where [fuel N₂O emissions] = 0.332 g/gal of distillate.

For the electricity category, there were 5 sources of generation: (1) San Diego Gas and Electric (SDG&E) owned generation, (2) electricity purchased by SDG&E from within and outside the region, (3) electricity sold to customers from other providers (direct access), (4) electricity associated with Department of Water Resources contracts issued during the 2000–2001 California electricity crises and still continuing, and (5) self-serve generation. Where fuel data was available within any of these sources, the basic calculation used was: CO₂ equivalent = ((amount of fuel consumed) × (average heat content of fuel) × (CARB emissions factor—for CH₄, CO₂, and N₂O) × (global warming potential, GWP)). Where no fuel data was available, two different methods were used to estimate emissions. In the first method, the CARB default emissions rates were used (Alvarado and Griffin, 2007). In the second method, average emissions profiles for the utilities that sold the most electricity to SDG&E over the period 1990–2007 were calculated with actual fuel, heat content, and net energy generation numbers. The CARB default value for unspecified location and unspecified fuel was 1100 lbs CO₂/MWh. The CARB Pacific Northwest (PNW) default emissions factors (CO₂-E/lbs/MWh) per year from 1990 to 2005 were: 474, 476, 461, 470, 465, 476, 487, 483, 479, 472, 479, 472, 479, 773, and 529, respectively. These were based on a resource mix of 10.5% coal, 2.3% nuclear, 65.3% hydro, 19.4% natural gas and 2.4% renewable energy. The CARB Pacific Southwest (PSW) default emissions factors (CO₂-E/lbs/MWh) per year from 1990 to 2005 were 1688, 1701, 1688, 1693, 1679, 1706, 1708, 1702, 1690, 1668, 1666, 1515, 1563, 1598, 1582, and 1582, respectively. This is based on a resource mix of roughly 57% coal, 11% nuclear, 3.4% hydro, and 28% natural gas fuel (Alvarado and Griffin, 2007).

California Air Resources Board to develop the statewide GHG inventory from 1990 to 2004, which in turn were based on IPCC methodologies (IPCC, 2006). All economic sectors, excluding most military activities and emissions from some private jets, and all geographical areas of the San Diego region, were incorporated into the inventory. While method limitations were not always quantifiable in each sector, we identified uncertainties where possible.

To consider potential actions to reduce emissions, the study adapted the Pacala–Socolow (Pacala and Socolow, 2004) approach to develop GHG reduction wedges. Where Pacala and Socolow showed that a portfolio of existing technologies could stabilize atmospheric carbon dioxide at an acceptable level within 50 years, this study analyzed the reduction effect of existing or pending state mandates related to climate change and other feasible regional measures towards achieving the state's adopted 2020 emissions reduction target if hypothetically applied to the region. Business-as-usual forecasts were developed using regional growth projections. Reductions for each category of emissions were developed for our region based on state measures and other regional or local strategies, such as conservation measures or innovative but feasible measures such as the potential replacement of a coal-powered electricity generation contract.

3. Results

The San Diego region emitted approximately 34 million metric tons of carbon dioxide equivalent (MMT CO₂E) in 2006 (Figs. 1 and 3)—a 17% increase over the 1990 level of 29 MMT CO₂E, commensurate with population growth during the same period. The uncertainty for the annual totals is approximately 4%, with uncertainties for the electricity category being 12% and that for on-road transportation about 4%. The total translates to about 12 metric tons CO₂E per capita throughout the period of study, slightly lower than the California statewide estimate (13 in 2004) and significantly lower than the US level (24 in 2007). Though the per capita values are not adjusted for weather, it has been shown that the lower per capita energy use in California compared with the US value is due $\frac{2}{3}$ to climate advantages and $\frac{1}{3}$ to state energy efficiency measures since the 1970s (Schipper and McMahon, 1995). Emissions from cars and light-duty trucks represented the largest fraction of total GHG emissions, or 46% of the total, followed by emissions from electricity (25%) and natural gas end-use consumption (9%). When presented by economic sector – residential, commercial and industrial – inventory results suggest that nearly 60% of the emissions are directly related to individual activities, such as driving and electricity and natural gas use in homes.

Vehicle types included in the analysis of on-road transportation were passenger cars, light, medium- and heavy-duty trucks, buses, motor homes, and motorcycles. Emissions by vehicle type have varied over time. Between 1990 and 2001 passenger cars were the largest emitting vehicle class; however, since 2002, light-duty trucks have surpassed passenger cars as the largest greenhouse gas-emitting vehicle class (Fig. 2). Passenger vehicles and light-duty trucks are currently the largest contributors of greenhouse gases of all vehicle types and together comprise approximately 89% of emissions from this category.

The commercial sector is the largest contributor of greenhouse emissions associated with electricity, responsible for 44% of emissions, while the residential sector accounts for approximately 36%. Within the commercial sector, office buildings are the largest emitting building type, whereas natural gas end-use emissions were greatest in the residential sector.

The remaining categories comprise approximately 20% of all emissions. (Fig. 1). Civil aviation, both intrastate and interstate but

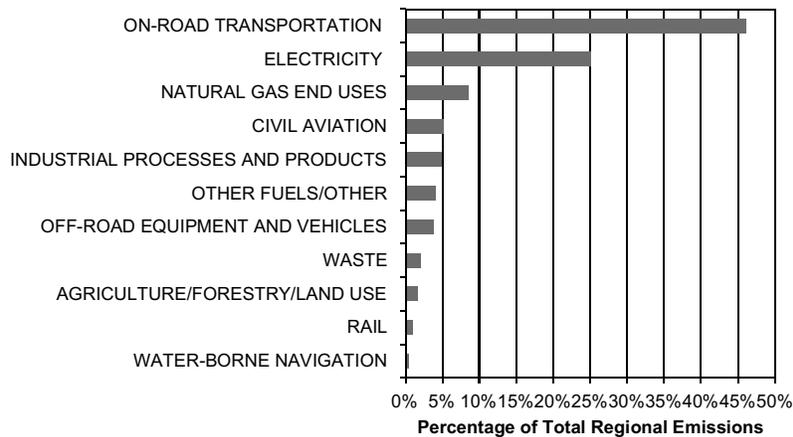


Fig. 1. Greenhouse gas emissions, San Diego County, 2006.

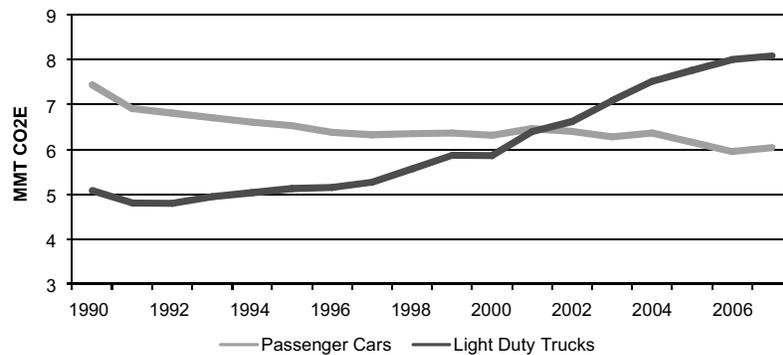


Fig. 2. Greenhouse gas emissions from two vehicle categories, San Diego County.

not international, contributes roughly 5% of the total, but this may be underestimated due to the exclusion of military operations as well as partial exclusion of private jets. Interstate flight emissions are not included in the California statewide inventory although it is itemized as a separate entry. Excluding interstate flights from San Diego County, however, leads to a significant underestimation of aviation emissions since the analysis shows that interstate flights are the driving force for emissions in this category, and that intrastate flights from the main San Diego airport have decreased over the period of study to now less than 6% of the aviation emissions.

Given San Diego's economic make up, emissions caused by the non-fuel industrial processes and products category (mainly refrigerants) are small (less than 5%). Off-road equipment and vehicles, account for about 4% of regional emissions.

A category widely believed to be a large component of GHG emissions is shipping. At the local level however, waterborne emissions, mainly from activities within the Port of San Diego but also including the transit passage of ocean-going vessels through county waters to a distance of 24 nautical miles off-shore, constitute less than 1% of the region's emissions. The negative perception is most likely associated with the visibility associated with diesel and sulfur dioxide emissions from ships. The Port of San Diego has already acted to meet state obligations to reduce these more visible criteria pollutant emissions under the federal Clean Air Act.

Landfills and wastewater treatment plants each contributed less than 1% to total GHG emissions once emissions removals for electricity generation were accounted for. An average of 69% of the landfill emissions, and 71% of wastewater treatment emissions, are captured mostly for electricity generation. CO₂E emissions from this electricity generation are captured in the electricity category.

Emissions from agriculture and land development were generally of the order of 1% of total GHG emissions and in most years were offset by sequestration by vegetation. However, during large wildfire episodes, such as those in 2003 and 2007, carbon dioxide emissions were significant (Fig. 3).

3.1. Projected emissions and reduction strategies

By 2020, under a business-as-usual scenario, defined as no change in policy or practice, regional GHG emissions are expected to reach approximately 43 MMT CO₂E, 26% over 2006 levels or 48% over 1990 levels (Fig. 4).

Through a combination of 21 reduction strategies (Fig. 5) however, we showed that total emissions could reach the AB 32 target of 1990 levels by 2020. Most of the reductions come from existing or pending state measures as well as feasible regional policies. Thus the Renewable Portfolio Standards (2002) which require a 20% use of renewable energy for electricity production,

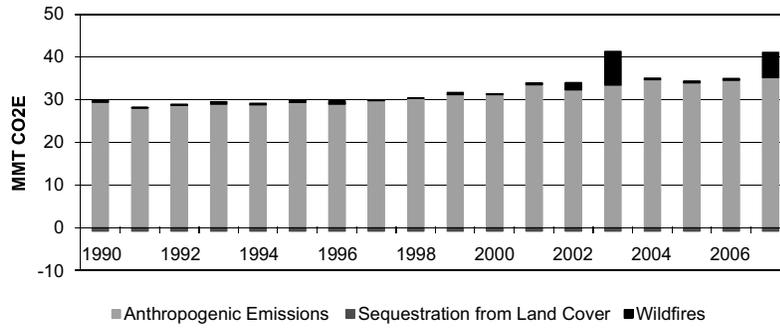


Fig. 3. Greenhouse gas emissions according to sources and sinks, San Diego County.

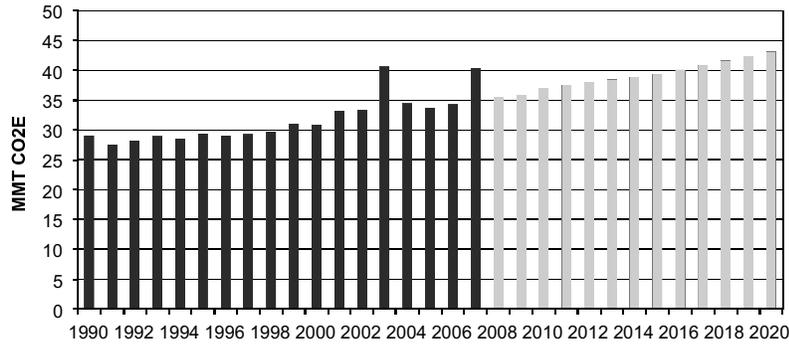


Fig. 4. Projected greenhouse gas emissions, San Diego County, 2008–2020.

Emission Reduction Strategies for San Diego County to Meet Hypothetical AB 32 Targets by 2020

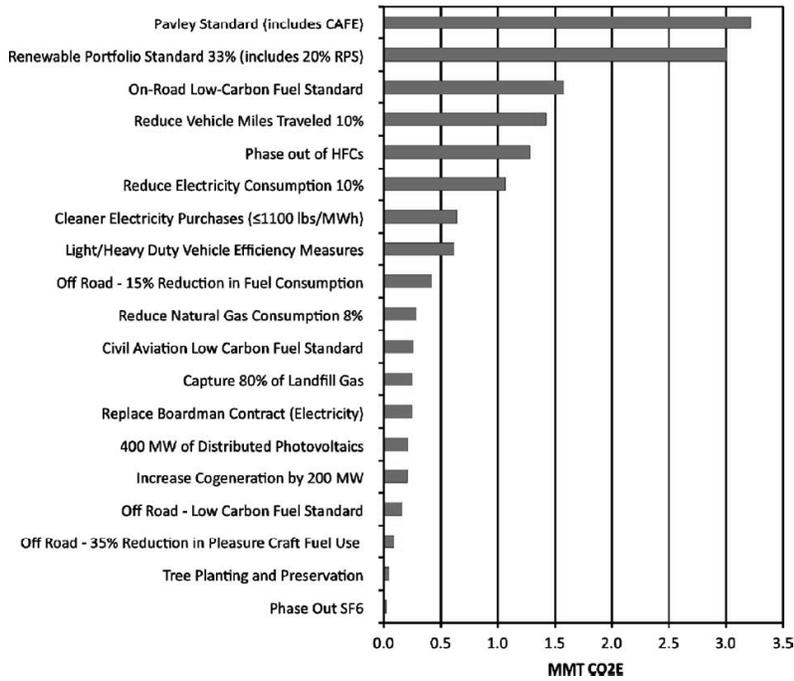


Fig. 5. Reduction strategies to meet AB 32 targets applied to San Diego County.

with an executive order goal of 33% by 2020, the AB 1493 (Pavley) standards for tailpipe emissions of GHGs from passenger cars and light-duty trucks, and the low carbon fuel standard are expected to contribute nearly 50% of the reductions. We recognize that certain emissions reductions measures may have complex interactions, such as using electricity as a transportation fuel, but did not evaluate these effects.

4. Discussion and conclusion

Although state (and perhaps federal) measures are the most important drivers for about 50% of the GHG emissions reductions in the transportation and electricity categories, actions to reduce emissions at all levels – state, regional, and local – will be required to achieve the AB 32 target and to place within reach California's Executive Order target of reducing statewide emissions 80% below 1990 levels by 2050 (Executive Order S-03-05). As far as the other categories of emissions, interstate civil aviation emissions are not within the jurisdiction of the regions or states, except in so far as policies may be enacted to introduce alternative forms of long distance transportation, for example from San Diego to the next major interstate destination Los Angeles, via train, or rapid bus systems. Likewise, shipping emissions are not within the jurisdiction of the region except in as much as policies such as port electrification are introduced. The development of alternative low carbon fuels for these categories is still in the research phase.

Nonetheless, the region can play a jurisdictionally direct role for a significant amount of the reductions needed. For example, we identified that at least 10% reduction in vehicle miles travelled (VMT) would be needed to achieve the reduction wedge for on-road transportation in addition to state mandates. Such reductions can be made only at the local level by city and regional planning organizations through land use development and transit planning. Similarly, energy efficiency measures for new and existing buildings can be developed at the local level. Regions also traditionally assist in implementation, monitoring and

compliance of state mandates but they can also expedite implementation by removing local technical, administrative, and legal barriers to effectively implement state mandates. In a second phase of our study, we will identify and assess the most viable regional and local policies to reduce greenhouse gases associated with the strategies identified here. This will include local measures that help to implement state policies and those affecting areas that local governments have direct control over, such as land use and transportation planning.

Acknowledgements

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**Climate Change, the California Environmental Quality Act,
and General Plan Updates:
Straightforward Answers to Some Frequently Asked Questions
California Attorney General's Office**

At any given time in this State, well over one hundred California cities and counties are updating their general plans. These are complex, comprehensive, long-term planning documents that can be years in the making. Their preparation requires local governments to balance diverse and sometimes competing interests and, at the same time, comply with the Planning and Zoning Law and the California Environmental Quality Act (CEQA).

Local governments have decades of experience in applying state planning law and excellent resources to assist them – such as the “General Plan Guidelines” issued by The Governor’s Office of Planning and Research (OPR).¹ They are also practiced in assessing whether general plans may have significant localized environmental effects, such as degradation of air quality, reductions in the water supply, or growth inducing impacts. The impact of climate change, however, has only fairly recently shown up on the CEQA radar.

The fact that climate change presents a new challenge under CEQA has not stopped local governments from taking action. A substantial number of cities and counties already are addressing climate change in their general plan updates and accompanying CEQA documents. These agencies understand the substantial environmental and administrative benefits of a programmatic approach to climate change. Addressing the problem at the programmatic level allows local governments to consider the “big picture” and – provided it’s done right – allows for the streamlined review of individual projects.²

Guidance addressing CEQA, climate change, and general planning is emerging, for example, in the pending CEQA Guideline amendments,³ comments and settlements by the Attorney General, and in the public discourse, for example, the 2008 series on CEQA and Global Warming organized by the Local Government Commission and sponsored by the Attorney General. In addition, the Attorney General’s staff has met informally with officials and planners from numerous jurisdictions to discuss CEQA requirements and to learn from those who are leading the fight against global warming at the local level.

Still, local governments and their planners have questions. In this document, we attempt to answer some of the most frequently asked of those questions. We hope this document will be useful, and we encourage cities and counties to contact us with any additional questions, concerns, or comments.

- **Can a lead agency find that a general plan update's climate change-related impacts are too speculative, and therefore avoid determining whether the project's impacts are significant?**

No. There is nothing speculative about climate change. It's well understood that (1) greenhouse gas (GHG) emissions increase atmospheric concentrations of GHGs; (2) increased GHG concentrations in the atmosphere exacerbate global warming; (3) a project that adds to the atmospheric load of GHGs adds to the problem.

Making the significance determination plays a critical role in the CEQA process.⁴ Where a project may have a significant effect on the environment, the lead agency must prepare an Environmental Impact Report (EIR).⁵ Moreover, a finding of significance triggers the obligation to consider alternatives and to impose feasible mitigation.⁶ For any project under CEQA, including a general plan update, a lead agency therefore has a fundamental obligation to determine whether the environmental effects of the project, including the project's contribution to global warming, are significant.

- **In determining the significance of a general plan's climate change-related effects, must a lead agency estimate GHG emissions?**

Yes. As OPR's Technical Advisory states:

Lead agencies should make a good-faith effort, based on available information, to calculate, model, or estimate the amount of CO₂ and other GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities.⁷

In the context of a general plan update, relevant emissions include those from government operations, as well as from the local community as a whole. Emissions sources include, for example, transportation, industrial facilities and equipment, residential and commercial development, agriculture, and land conversion.

There are a number of resources available to assist local agencies in estimating their current and projected GHG emissions. For example, the California Air Resources Board (ARB) recently issued protocols for estimating emissions from local government operations, and the agency's protocol for estimating community-wide emissions is forthcoming.⁸ OPR's Technical Advisory contains a list of modeling tools to estimate GHG emissions. Other sources of helpful information include the white paper issued by the California Air Pollution Control Officers Association (CAPCOA), "CEQA and Climate Change"⁹ and the Attorney General's website,¹⁰ both of which provide information on currently available models for calculating emissions. In addition, many cities and counties are working with the International Council for Local Environmental Initiatives (ICLEI)¹¹ and tapping into the expertise of this State's many colleges and universities.¹²

- **For climate change, what are the relevant “existing environmental conditions”?**

The CEQA Guidelines define a significant effect on the environment as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.”¹³

For local or regional air pollutants, existing physical conditions are often described in terms of air quality (how much pollutant is in the ambient air averaged over a given period of time), which is fairly directly tied to current emission levels in the relevant “area affected.” The “area affected,” in turn, often is defined by natural features that hold or trap the pollutant until it escapes or breaks down. So, for example, for particulate matter, a lead agency may describe existing physical conditions by discussing annual average PM10 levels, and high PM10 levels averaged over a 24-hour period, detected at various points in the air basin in the preceding years.

With GHGs, we’re dealing with a global pollutant. The “area affected” is both the atmosphere and every place that is affected by climate change, including not just the area immediately around the project, but the region and the State (and indeed the planet). The existing “physical conditions” that we care about are the current atmospheric concentrations of GHGs and the existing climate that reflects those concentrations.

Unlike more localized, ambient air pollutants which dissipate or break down over a relatively short period of time (hours, days or weeks), GHGs accumulate in the atmosphere, persisting for decades and in some cases millennia. The overwhelming scientific consensus is that in order to avoid disruptive and potentially catastrophic climate change, then it’s not enough simply to stabilize our annual GHG emissions. The science tells us that we must immediately and substantially reduce these emissions.

- **If a lead agency agrees to comply with AB 32 regulations when they become operative (in 2012), can the agency determine that the GHG-related impacts of its general plan will be less than significant?**

No. CEQA is not a mechanism merely to ensure compliance with other laws, and, in addition, it does not allow agencies to defer mitigation to a later date. CEQA requires lead agencies to consider the significant environmental effects of their actions and to mitigate them today, if feasible.

The decisions that we make today do matter. Putting off the problem will only increase the costs of any solution. Moreover, delay may put a solution out of reach at any price. The experts tell us that the later we put off taking real action to reduce our GHG emissions, the less likely we will be able to stabilize atmospheric concentrations at a level that will avoid dangerous climate change.

- **Since climate change is a global phenomenon, how can a lead agency determine whether the GHG emissions associated with its general plan are significant?**

The question for the lead agency is whether the GHG emissions from the project – the general plan update – are considerable when viewed in connection with the GHG emissions from past projects, other current projects, and probable future projects.¹⁴ The effects of GHG emissions from past projects and from current projects to date are reflected in current atmospheric concentrations of GHGs and current climate, and the effects of future emissions of GHGs, whether from current projects or existing projects, can be predicted based on models showing future atmospheric GHG concentrations under different emissions scenarios, and different resulting climate effects.

A single local agency can't, of course, solve the climate problem. But that agency can do its fair share, making sure that the GHG emissions from projects in its jurisdiction and subject to its general plan are on an emissions trajectory that, if adopted on a larger scale, is consistent with avoiding dangerous climate change.

Governor Schwarzenegger's Executive Order S-3-05, which commits California to reducing its GHG emissions to 1990 levels by 2020 and to eighty percent below 1990 levels by 2050, is grounded in the science that tells us what we must do to achieve our long-term climate stabilization objective. The Global Warming Solutions Act of 2006 (AB 32), which codifies the 2020 target and tasks ARB with developing a plan to achieve this target, is a necessary step toward stabilization.¹⁵ Accordingly, the targets set in AB 32 and Executive Order S-3-05 can inform the CEQA analysis .

One reasonable option for the lead agency is to create community-wide GHG emissions targets for the years governed by the general plan. The community-wide targets should align with an emissions trajectory that reflects aggressive GHG mitigation in the near term and California's interim (2020)¹⁶ and long-term (2050) GHG emissions limits set forth in AB 32 and the Executive Order.

To illustrate, we can imagine a hypothetical city that has grown in a manner roughly proportional to the state and is updating its general plan through 2035. The city had emissions of 1,000,000 million metric tons (MMT) in 1990 and 1,150,000 MMT in 2008. The city could set an emission reduction target for 2014 of 1,075,000 MMT, for 2020 of 1,000,000 MMT, and for 2035 of 600,000 MMT, with appropriate emission benchmarks in between. Under these circumstances, the city could in its discretion determine that an alternative that achieves these targets would have less than significant climate change impacts.

- **Is a lead agency required to disclose and analyze the full development allowed under the general plan?**

Yes. The lead agency must disclose and analyze the full extent of the development allowed by the proposed amended general plan,¹⁷ including associated GHG emissions.

This doesn't mean that the lead agency shouldn't discuss the range of development that is likely to occur as a practical matter, noting, for example, the probable effect of market forces. But the lead agency can't rely on the fact that full build out may not occur, or that its timing is uncertain, to avoid its obligation to disclose the impacts of the development that the general plan would permit. Any other approach would seriously underestimate the potential impact of the general plan update and is inconsistent with CEQA's purposes.

- **What types of alternatives should the lead agency consider?**

A city or county should, if feasible, evaluate at least one alternative that would ensure that the community contributes to a lower-carbon future. Such an alternative might include one or more of the following options:

- higher density development that focuses growth within existing urban areas;
- policies and programs to facilitate and increase biking, walking, and public transportation and reduce vehicle miles traveled;
- the creation of "complete neighborhoods" where local services, schools, and parks are within walking distance of residences;
- incentives for mixed-use development;
- in rural communities, creation of regional service centers to reduce vehicle miles traveled;
- energy efficiency and renewable energy financing (see, e.g., AB 811)¹⁸
- policies for preservation of agricultural and forested land serving as carbon sinks;
- requirements and ordinances that mandate energy and water conservation and green building practices; and
- requirements for carbon and nitrogen-efficient agricultural practices.

Each local government must use its own good judgment to select the suite of measures that best serves that community.

- **Can a lead agency rely on policies and measures that simply "encourage" GHG efficiency and emissions reductions?**

No. Mitigation measures must be "fully enforceable."¹⁹ Adequate mitigation does not, for example, merely "encourage" or "support" carpools and transit options, green building practices, and development in urban centers. While a menu of hortatory GHG policies is positive, it does not count as adequate mitigation because there is no certainty that the policies will be implemented.

There are many concrete mitigation measures appropriate for inclusion in a general plan and EIR that can be enforced as conditions of approval or through ordinances. Examples are described in a variety of sources, including the CAPCOA's white paper,²⁰ OPR's Technical Advisory,²¹ and the mitigation list on the Attorney General's website.²² Lead agencies should also consider consulting with other cities and counties that have recently completed general plan updates or are working on Climate Action Plans.²³

- **Is a “Climate Action Plan” reasonable mitigation?**

Yes. To allow for streamlined review of subsequent individual projects, we recommend that the Climate Action Plan include the following elements: an emissions inventory (to assist in developing appropriate emission targets and mitigation measures); emission targets that apply at reasonable intervals through the life of the plan; enforceable GHG control measures; monitoring and reporting (to ensure that targets are met); and mechanisms to allow for the revision of the plan, if necessary, to stay on target.²⁴

If a city or county intends to rely on a Climate Action Plan as a centerpiece of its mitigation strategy, it should prepare the Climate Action Plan at the same time as its general plan update and EIR. This is consistent with CEQA’s mandate that a lead agency must conduct environmental review at the earliest stages in the planning process and that it not defer mitigation. In addition, we strongly urge agencies to incorporate any Climate Action Plans into their general plans to ensure that their provisions are applied to every relevant project.

- **Is a lead agency also required to analyze how future climate change may affect development under the general plan?**

Yes. CEQA requires a lead agency to consider the effects of bringing people and development into an area that may present hazards. The CEQA Guidelines note the very relevant example that “an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision.”²⁵

Lead agencies should disclose any areas governed by the general plan that may be particularly affected by global warming, e.g.: coastal areas that may be subject to increased erosion, sea level rise, or flooding; areas adjacent to forested lands that may be at increased risk from wildfire; or communities that may suffer public health impacts caused or exacerbated by projected extreme heat events and increased temperatures. General plan policies should reflect these risks and minimize the hazards for current and future development.

Endnotes

¹For a discussion of requirements under general planning law, see OPR’s General Plan Guidelines (2003). OPR is in the process of updating these Guidelines. For more information, visit OPR’s website at <http://www.opr.ca.gov/index.php?a=planning/gpg.html>.

²OPR has noted the environmental and administrative advantages of addressing GHG emissions at the plan level, rather than leaving the analysis to be done project-by-project. See OPR, Preliminary Draft CEQA Guideline Amendments, Introduction at p. 2

(Jan. 8, 2009), available at http://opr.ca.gov/download.php?dl=Workshop_Announcement.pdf.

³ OPR issued its Preliminary Draft CEQA Guidelines Amendments on January 8, 2009. Pursuant to Health and Safety Code, § 21083.05 (SB 97), OPR must prepare its final proposed guidelines by July 1, 2009, and the Resources Agency must certify and adopt those guidelines by January 1, 2010.

⁴ Cal. Code Regs., tit. 14 (hereinafter “CEQA Guidelines”), § 15064, subd. (a).

⁵ CEQA Guidelines, § 15064, subd. (f)(1).

⁶ CEQA Guidelines, § 15021, subd. (a).

⁷ OPR, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review (June 2008), available at <http://opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf>.

⁸ ARB’s protocols for estimating the emissions from local government operations are available at <http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm>.

⁹ CAPCOA, CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act (January 2008) (hereinafter, “CAPCOA white paper”), available at <http://www.capcoa.org/>.

¹⁰ http://ag.ca.gov/globalwarming/ceqa/modeling_tools.php

¹¹ <http://www.iclei-usa.org>

¹² For example, U.C. Davis has made its modeling tool, UPlan, available at <http://ice.ucdavis.edu/doc/uplan>; San Diego School of Law’s Energy Policy Initiatives Center has prepared a GHG emissions inventory report for San Diego County <http://www.sandiego.edu/EPIC/news/frontnews.php?id=31>; and Cal Poly, San Luis Obispo City and Regional Planning Department is in the process of preparing a Climate Action Plan for the City of Benicia, see <http://www.beniciaclimateactionplan.com/files/about.html>.

¹³ CEQA Guidelines, § 15002, subd. (g).

¹⁴ CEQA Guidelines, § 15064(h)(1).

¹⁵ See ARB, Scoping Plan at pp. 117-120, available at <http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf>. (ARB approved the Proposed Scoping Plan on December 11, 2008.)

¹⁶ In the Scoping Plan, ARB encourages local governments to adopt emissions reduction goals for 2020 “that parallel the State commitment to reduce greenhouse gas emissions by approximately 15 percent from current levels” Scoping Plan at p. 27; see *id.* at Appendix C, p. C-50. For the State, 15 percent below current levels is approximately equivalent to 1990 levels. *Id.* at p. ES-1. Where a city or county has grown roughly at

the same rate as the State, its own 1990 emissions may be an appropriate 2020 benchmark. Moreover, since AB 32's 2020 target represents the State's *maximum* GHG emissions for 2020 (see Health & Safety Code, § 38505, subd. (n)), and since the 2050 target will require substantial changes in our carbon efficiency, local governments may consider whether they can set an even more aggressive target for 2020. See Scoping Plan, Appendix C, p. C-50 [noting that local governments that "meet or exceed" the equivalent of a 15 percent reduction in GHG emissions by 2020 should be recognized].

¹⁷ *Christward Ministry v. Superior Court* (1986) 184 Cal.App.3d 180, 194 [EIR must consider future development permitted by general plan amendment]; see also CEQA Guidelines, §§ 15126 [impact from all phases of the project], 15358, subd. (a) [direct and indirect impacts].

¹⁸ See the City of Palm Desert's Energy Independence Loan Program at <http://www.ab811.org>.

¹⁹ Pub. Res. Code, § 21081.6, subd. (b); CEQA Guidelines, § 15091, subd. (d); see also *Federation of Hillside and Canyon Assocs.* (2000) 83 Cal.App.4th 1252, 1261 [general plan EIR defective where there was no substantial evidence that mitigation measures would "actually be implemented"].

²⁰ CAPCOA white paper at pp. 79-87 and Appendix B-1.

²¹ OPR Technical Advisory, Attachment 3.

²² See http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf [mitigation list]; http://ag.ca.gov/globalwarming/pdf/green_building.pdf [list of local green building ordinances].

²³ See http://opr.ca.gov/ceqa/pdfs/City_and_County_Plans_Addressing_Climate_Change.pdf.

²⁴ See Scoping Plan, Appendix C, at p. C-49.

²⁵ CEQA Guidelines, § 15126.2, subd. (a).

GHG PLAN LEVEL QUANTIFICATION GUIDANCE

April 15, 2010

This guidance is intended to assist local governments in developing GHG emission inventories and projections, and in quantifying emission reductions from various policies and mitigation measures. In drafting this guidance, the Air District has drawn from established methodologies and practices, rather than creating new protocols or quantification methods. This guidance should be interpreted as recommended approaches rather than a protocol. This guidance will be continually updated as new tools, methodologies and protocols are developed.

The contact for all Air District data referenced below is Abby Young (ayoung@baaqmd.gov). All questions or comments related to this guidance should be directed to Abby Young.

1. GHG Inventories

1.1 Basic parameters

1.1.1 Emissions to include

Carbon dioxide (CO₂) must be inventoried across all sectors. It is also highly recommended that methane (CH₄) from landfills be included in GHG inventories (see more detail in section 1.5 below). Accounting of N₂O, SF₆, HFC and PFC emission sources can also be included where reliable estimation methodologies and data are available.

1.1.2 Sectors to include

The inventory should reflect the legal geographic boundary of the jurisdiction. The table below lists the sectors that should be included in GHG inventories, as well as the emission sources within each sector and recommended energy types to include.

Sector	Emission sources	Energy types
Residential	Energy and water use in residential buildings	Electricity Natural gas
Commercial	Energy and water use in commercial, government and institutional buildings	Electricity Natural gas
Industrial	Energy and water use in industrial buildings, facilities and processes	Electricity Natural gas

Sector	Emission sources	Energy types
Transportation	All road vehicles Public transportation Light rail Off-road vehicles/equipment	Gasoline Diesel CNG LNG Bio-diesel
Waste	Landfills Waste stream	Landfill gas

It is the local government's discretion to determine which, if any, additional energy types to include in its inventory. It is highly recommended that any energy type contributing a measurable amount to the overall GHG picture in any sector should be included.

Local governments may want to add additional sectors to their inventories, such as agriculture. If this is done, the assumptions, methodologies and data sources should be clearly identified.

1.1.3 Emission sources to include/exclude

All greenhouse gas emission sources within the geographic scope of the inventory should be accounted for.

If an emissions reduction is to be claimed through a mitigation measure, the correlating emission source must be included in the inventory. For example, a jurisdiction cannot take credit for installing an emissions capture facility at a closed landfill site unless the baseline emissions inventory includes that site as an emissions source.

If any specific exclusion is made, it should be disclosed, along with a justification of the exclusion.

1.1.4 Biogenic carbon emissions

Biogenic CO₂ emissions result from materials that are derived from living cells, as opposed to CO₂ emissions derived from fossil fuels, limestone and other materials that have been transformed by geological processes. Biogenic CO₂ contains carbon that is present in organic materials that include, but are not limited to, wood, paper, vegetable oils, animal fat, and food, animal and yard waste. Biogenic CO₂ emissions should be excluded from the GHG inventory because these emissions are the result of materials in the biological/physical carbon cycle, rather than the geological carbon cycle.

1.1.5 Units to report in

All GHG emissions should be reported in metric tons of CO₂ equivalent (CO₂e), per the international convention of using "global warming potentials." To convert emissions into CO₂e, use the guidance provided in Equation 6.5 of ARB's Local Government Operations Protocol, version 1.0 (page 34).

A list of standard conversion factors for units of measurement is included in the Local Government Operations Protocol, Appendix F.

1.1.6 Base year to choose

The baseline inventory should include one complete calendar year of data for 2008 or earlier, depending on the jurisdiction's GHG emission reduction target (see Section 2.7.2 of the CEQA Guidelines, under Standard Elements of a GHG Reduction Strategy for further guidance).

Discussion note: ARB recommends that GHG inventories use a three-year baseline. A three-year average baseline tends to dampen unusual aspects in any given year that would not be representative of a good baseline. For example, in years of severe drought, CO₂ electricity coefficients may be more carbon intensive than in other years due to the need to supplant diminished hydroelectric power capacity with fossil fuels to produce electricity. Taking a three year average can smooth over some of these anomalies. However, it is recognized that this approach requires an additional level of effort, and so is considered optional rather than recommended.

1.1.7 Emission coefficients to use

Jurisdictions should use electricity coefficients listed in the Local Government Operations Protocol, Appendix G. The Protocol contains utility-specific coefficients, or emission factors, for carbon dioxide (CO₂) (table G.5) and region specific emission factors for methane (CH₄), and nitrous oxide (N₂O) emissions for electricity consumption. GHG emission inventories should use the CO₂ emission factors for the jurisdiction's specific utility, and use the sub-region designation CAMX, WECC California, for calculating CH₄, and N₂O emissions (table G.7), if those emissions are being included in the inventory. Refer to the Local Government Operations Protocol for more detailed guidance and emission factors.

For non-electricity energy, jurisdictions should also use coefficients listed in the Local Government Operations Protocol, Appendix G.

1.2 Residential and Commercial Sectors

1.2.1 Emission sources to include

The types of buildings comprising the residential and commercial sectors include single and multi-family housing, commercial buildings, governmental buildings and facilities, and institutional buildings and facilities (hospitals, colleges, etc.).

The GHG inventory should include direct and indirect emissions produced by the operation of residential and commercial buildings. Direct emissions refer to emissions produced due to the onsite combustion of energy, such as natural gas used in furnaces, boilers and hot water heaters. Indirect emissions refer to the emissions produced offsite as a result of energy used in the buildings, such as those emitted by power plants due to electricity use.

There may be a small amount of additional types of energy utilized by buildings that result in GHG emissions, such as propane, heating oil, diesel used by generators, etc. It is recommended that local governments include this data in their GHG inventories if the data is available and reliable. Because this energy use is dispersed and difficult to identify/track, at this time the Air District does not suggest requiring its inclusion in GHG inventories. This recommendation may change in the future as better information becomes available.

1.2.2 Data sources to use

Local power utilities (PG&E, municipal utilities) are the best source of data for electricity and natural gas use by residential and commercial buildings. To access this data from PG&E, the local government must contact PG&E directly and make an information request. All data requests should be sent to GHGDataRequests@pge.com.

1.3 Industrial Sectors

1.3.1 Emission sources to include

The industrial sector is comprised of industrial buildings and facilities. Emission sources from this sector include energy directly used onsite, such as natural gas, combined heat and power, diesel fuel, etc., and also electricity used in buildings and facilities even if it is generated outside the jurisdiction.

Emissions from very large energy intensive industrial facilities (paper and steel mills, industrial chemical plants, petrochemical plants and refineries, metal smelters, large cement making operations) should be represented within the context of the community-scale emissions inventory results in an appropriate fashion, as (1) their emissions may be well documented in other inventory programs, (2) the purpose of a local government analysis is to account for the emissions the jurisdiction has the ability to influence, and (3) their inclusion could skew the results to the point of prohibiting the facilitation of intercity comparisons. Two sets of emission inventory results should be presented – one including the large emission source and one excluding it. By doing this, all emissions in the jurisdiction are accounted for, and at the same time policy relevance is maintained by seeing an inventory that is not highly skewed toward one dominating emission source.

1.3.2 Data sources to use

Consumption data on electricity and natural gas supplied directly from utilities (PG&E or municipal utilities) can be supplied by those utilities directly. To access this data from PG&E, the local government must contact PG&E directly and make an information request. All data requests should be sent to GHGDataRequests@pge.com.

1.3.3 Direct access

In some cases, large industrial facilities may combust and consume energy directly onsite. Because local utilities do not supply this energy, they can not be used as a data source. The Air District can assist local governments in developing and providing non-proprietary GHG emissions data for industrial facilities that are permitted by the Air District.

1.3.4 Transportation Sector

1.3.5 Emission sources to include/exclude

Gasoline and diesel fuel used by on-road and off-road vehicles should be included in the GHG inventory.

1.3.6 Recommended metric: VMT

Vehicle miles traveled (VMT) is the preferred metric for determining GHG emissions from the transportation sector. Fuel sales and vehicle trips have also been

suggested as appropriate metrics, however at this time the Air District recommends using VMT.

GHG emissions can be determined through fuel sales within a jurisdiction. However, it is difficult to develop an accurate number for fuel sales that would be appropriate for a community-wide inventory. In addition, fuel sales may not be as valuable a piece of information as VMT or vehicle trips in terms of policy relevance, as it does not provide any information on driving patterns. Given this, fuel sales is not the preferred metric for determining GHG emissions from the transportation sector.

Vehicle trips can be used as a metric in GHG inventories as long as meaningful VMT and emission factors can be generated. In order to adequately determine GHG emissions from vehicle trips a variety of inputs need to be known: VMT per trip, trip speed, vehicle type, etc. Because of the complexity involved in this exercise, there are currently no protocols or agreed upon methodologies for using vehicle trips to determine GHG emissions in a community inventory. If vehicle trips are used in place of VMT to determine GHG emissions, all assumptions, methodologies and data sources must be clearly identified.

The Air District will continue to research and explore new methods and the possibility of using additional metrics to determine GHG emissions from transportation.

1.3.7 Highway VMT

The percentage that a city contributes to overall county-wide VMT is also the percentage that the city should use to apportion its share of highway VMT occurring in the county. For example, if the City of Oakland contributes 30% to all VMT in Alameda County, then the City should apportion 30% of all highway VMT in Alameda County to its own community inventory.

1.3.8 Data sources to use

The recommended data source for city and county VMT data is "2008 (or most recent) California Public Road Data"

(<http://www.dot.ca.gov/hq/tsip/hpms/datalibrary.php>), a publication of CalTrans' Highway Performance Monitoring System. This provides daily VMT (DVMT) numbers, which account for decreased traffic volumes on the weekends.

The Air District can provide assistance to agencies to determine localized emission factors, vehicle mix, fuel usage and fuel efficiency for each county. The Air District generates CO₂, and CH₄ emission factors using the EMFAC model. The Air District compiles data on N₂O emissions. The basis for the estimates are CO₂ emission rates (grams/mile), which are based on engine testing at different speeds, and county-wide vehicle registration data obtained from DMV. Estimates are available for years 1970-2040. The model also provides estimates of criteria air pollutants, as well as methane emissions (CH₄). In addition, it produces an estimate of fuel usage, and fuel economy. County variations in emission factors are due to the use of county-specific vehicle usage, vehicle mix, vehicle speed and ambient temperatures. For more information on EMFAC, please refer to the California Air Resources Board website: http://www.arb.ca.gov/msei/onroad/latest_version.htm.

Discussion note: ARB has developed a post-processing tool for EMFAC2007

that incorporates the emissions impacts of Pavley I and II into the tool. In addition, ARB will be releasing EMFAC2010 by the end of the year, with Pavley I and II fully integrated.

1.3.9 Off-road emissions

The Air District can work with local governments to provide emissions data for off-road sources, which include lawn and garden equipment, construction equipment, industrial equipment and light commercial equipment. Emissions for off-road sources is estimated using ARB's OFFROAD2007 (or most recent year) emissions model.

1.4 Waste Sector

1.4.1 Emission sources to include/exclude

There are two sources of emissions associated with the landfilled waste that should be included in the GHG inventory. The first is methane being produced at landfills located within the jurisdiction's boundary, and the second is the estimated future generation of methane associated with waste being produced by entities residing in the jurisdiction during the base year (community generated waste).

1) Direct landfill emissions

This includes methane emissions released from any landfills located within the jurisdiction in the baseline year, whether closed or open. It also includes any methane emissions from the alternative daily cover (ADC) used in the landfills where the waste generated within the jurisdiction is disposed.

2) Future emissions from waste generated in the base year

Waste breaks down and releases emissions over time. In order to fully account for emissions due to lifetime decomposition, future emissions are estimated and attributed up front to waste going to landfill in any given year. This should include methane emissions from all solid waste generated within the jurisdiction in the base year that was sent to landfills regardless of whether the landfills are located within or outside of the jurisdiction's community boundary.

Emissions from stationary combustion of fossil fuels at the site of the landfill should be included in your GHG inventory but this consumption will be catalogued in the commercial and industrial sectors. Composting and the burning of biofuels (the biogenic portion of biodiesel, for example) are typically not included in GHG inventories. Some communities have opted to note these biogenic emissions as information items, without bundling them into any emission total.

At the community level, electricity use associated with the operation of landfills within the jurisdiction should be included in data for the industrial or commercial sectors. You will not need to duplicate the reporting of emissions from electricity consumption in the community Waste Sector.

1.4.2 Methane Recovery Factors

Emissions from landfills must be multiplied by a methane recovery factor, which is based on the amount of landfill gas that is retained (not emitted) due to the facility's landfill gas capture system. Even if a landfill has determined its specific methane recovery factor, all landfills should use the recommended recovery factor of 75%.

The 75% recovery factor is the default value recommended in the Local Government Operations Protocol which has been adopted by ARB, The Climate Registry and ICLEI.

For landfills with no gas capture systems, a first order decay (FOD) method should be used to determine onsite emissions. In the Bay Area, it is most likely that the only landfills without gas collection systems are older, closed facilities. Local governments with such landfills should use ARB's Landfill Emissions Tool to model landfill gas emissions (<http://www.arb.ca.gov/cc/protocols/localgov/pubs/pubs.htm>).

1.4.3 Sewage and wastewater treatment

Carbon dioxide, nitrous oxide and methane emissions are created through sewage and wastewater treatment processes. Carbon dioxide emissions associated with these processes are considered biogenic in nature and should only be included as information items. Methane and nitrous oxide emissions, however, should be included. The methodology included in the Local Government Operations Protocol (Chapter 10) for determining methane and nitrous oxide emissions from sewage and wastewater treatment should be followed.

1.4.4 Data sources

The methane emission factors for lifetime decomposition associated with waste generation should be taken from the EPA WARM model. For quantification of emissions only methane generation is taken into account. More information on the WARM Model is available at:

http://epa.gov/climatechange/wyacd/waste/calculators/Warm_home.html

The Air District can provide information on emissions produced directly from landfills that are permitted by the Air District.

Waste disposal and alternative daily cover tonnage is reported by permitted facility operators and compiled by county/regional agency disposal reporting coordinators and published in the Disposal Reporting System (DRS) for every county/jurisdiction from 1995 to 2006. This data can be accessed through the Department of Resources Recycling and Recovery – CalRecycle – formerly the California Integrated Waste Management Board.
(<http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/>)

Discussion note: Determining lifecycle emissions from consumption and waste is a developing area of research. Some local governments are currently considering altering their GHG inventories to account for lifecycle emission impacts of consumption from their communities. Because this is a very new area of research without generally accepted methodologies, the Air District is not recommending this approach at this time. However, this emerging trend provides added reason to include emissions from the waste stream in GHG inventories.

1.5 Regional emissions sources

1.5.1 Water utilities

Electricity use associated with processing and pumping water by water utilities is embedded in data provided to each jurisdiction by PG&E or municipal utilities.

1.5.2 Transit (BART, CalTrain, AC Transit, etc.)

Emissions from energy used for transportation by transit systems within a community should be included in the inventory. In many cases local transit systems will be operated as part of a larger regional transit system. In these cases, the local government must count the emissions that result from the movement of the transit system within the geographic boundaries of the community apportioned on a distance traveled basis.

Emissions from electric transit vehicles, such as BART, will appear as part of the commercial sector, as this electricity consumption will be embedded in the community electricity data.

1.5.3 Airports and sea ports

Emissions from the operations of sea ports and airports (building energy use, ground fleet vehicles, etc.) should be included in the inventory. In addition, fuel used by vehicles (planes, ships) in dock should also be included in the inventory. Emissions from providing electricity to ships and planes in port should be counted in the community inventory as utility provided electricity.

1.5.4 Non-road vehicle use (planes, trains, ships)

Rail: These systems are generally operated as part of a larger regional system. At this time the Air District does not recommend that emissions from heavy duty rail be included in community GHG inventories.

Air travel: Methods to apportion emissions from air travel to community inventories are currently inconsistent and highly speculative. At this time the Air District does not recommend that emissions from air travel be included in community GHG inventories. Ground emissions from an airport would still be included in the inventory, however.

Water travel: Emissions from water travel occurring entirely within the local government's geographic boundary should be included in the inventory. Emissions from water travel largely occurring outside the geographic boundaries of the community (such as with sea travel) should not be included.

1.5.5 Pass-through highway traffic or inter-regional travel

Vehicle travel on highways or other forms of inter-regional travel should be included in the GHG inventory to the extent that VMT occurs within the geographic boundary of the jurisdiction. The Air District can assist local governments in developing and providing VMT data for highway travel with their jurisdictions' geographic boundaries.

1.5.6 Large industrial facilities

See discussion of large industrial facilities in section 1.3 above.

1.6 Recommended Tools

The following tools can help local governments assess baseline inventory GHG emissions, and/or GHG reductions from project characteristics and mitigation measures. While many tools exist that can assist with GHG quantification, the Air District recommends these particular tools due to their long-term use as industry standards and well-vetted methodologies. Many other quantification tools draw from the methodologies and assumptions embedded in these tools.

1.6.1 ICLEI Clean Air – Climate Protection Software

The Clean Air and Climate Protection Software (CACP 2009) created by ICLEI is a one-stop emissions management tool to calculate and track emissions of GHG and criteria pollutants associated with electricity, fuel use, and waste disposal. This climate protection software was created to support local governments in developing emission inventories and climate action planning. This software is free for use and may be downloaded at <http://www.icleiusa.org/action-center/tools/cacp-software>

1.6.2 EMFAC

ARB developed the EMFAC (EMission FACtors) model to calculate emission rates from motor vehicles operating in California. The EMFAC model considers all motor vehicles, from passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. EMFAC and OFFROAD, the ARB model that calculates emissions from off-road vehicles, contain emission estimates for carbon dioxide and methane transportation emissions. EMFAC2007 and OFFROAD2007 represent the most current model versions and may be downloaded at, http://www.arb.ca.gov/msei/onroad/latest_version.htm

1.6.3 WARM

EPA created the WASte Reduction Model (WARM) to help calculate GHG emissions reductions from different waste management practices. WARM calculates and totals GHG emissions of baseline and alternative waste management practices such as, source reduction, recycling, combustion, composting, and landfilling. The model calculates emissions in metric tons of carbon equivalent (MTCE), metric tons of carbon dioxide equivalent (MTCO₂E), and energy units (million BTU) across a wide range of material types commonly found in municipal solid waste. WARM, last updated in November 2009, is free for use and may be applied as web-based calculator or Excel spreadsheet at, http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html)

1.6.4 Local Government Operations Protocol¹

The Local Government Operations Protocol is designed to provide standard guidelines to assist local governments in quantifying and reporting GHG emissions associated with their government operations. The Protocol was developed in partnership by ARB, California Climate Action Registry (CCAR), and ICLEI, in collaboration with The Climate Registry and dozens of stakeholders. The Protocol provides the principles, approach, methodology, and procedures needed to develop a local government operations GHG emissions inventory. It is designed to support the complete, transparent, and accurate reporting of a local government's GHG emissions. The Protocol is free and may be downloaded at <http://www.arb.ca.gov/cc/protocols/localgov/pubs/pubs.htm>

1.6.5 Use of local models and methodologies

The Air District encourages local governments to apply local models and methodologies to quantify GHG emissions where appropriate. For example, using

¹ This guidance includes multiple references to the Local Government Operations Protocol (LGOP), version 1.0. It should be noted that the California Climate Action Reserve is scheduled to release version 1.1 of the LGOP in Spring of 2010. Upon release of version 1.1, all relevant references in this guidance will be revised.

local travel demand model data to inform GHG inventories may be appropriate, depending on the reliability of the data.

2. Projection (Forecast)

GHG emission projections, or forecasts, for communities should reflect a business-as-usual (BAU) approach, in which emissions are projected in the absence of any policies or actions that would occur beyond the base year that would reduce emissions.

2.1 Choosing a future/target year

The projection should include one complete calendar year of data for a future year. The future year should coincide with the year chosen for the jurisdiction's GHG emission reduction target. According to Section 2.7.2 of these Guidelines, the future year will most likely be 2020, but could also be a year farther in the future (see Section 2.7.2 of the CEQA Guidelines, under Standard Elements of a GHG Reduction Strategy for further guidance).

2.2 Growth projections

The Air District recommends consistency with ARB's Business-as-usual Forecasting Method where possible, except as noted below. ARB's 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors. For the purposes of the Scoping Plan, ARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time the Scoping Plan process was initiated, 2004 was the most recent year for which actual data were available.

Growth factors are sector-specific and are derived from several sources, including the energy demand models generated by California Energy Commission (CEC) for their 2007 Integrated Energy Policy Report (IEPR), business economic growth data developed for ARB's criteria pollutant forecast system (CEFS), population growth data from the California Department of Finance, and projections of vehicle miles traveled from ARB's on-road mobile source emissions model, EMFAC2007. For the electricity and other energy sectors, ARB consulted with CEC to select the most appropriate growth factor.

ARB's forecasting method is similar to other GHG forecasting approaches, including the method used in the Climate Action Team 2006 Report. Where appropriate, ARB used updated and improved growth factors for estimating 2020 emissions sector-by-sector. These future emissions are projected in the absence of any policies or actions that would reduce emissions.

Deviations from ARB's approach:

- Estimating population growth – future growth projections may be based on ABAG's most recent Projections report. ABAG derives its projections based on data from the Department of Finance, but adapts them with local information.
- Estimating VMT growth – ARB uses fuel sales data to develop projections of VMT. As discussed above, fuel sales are not a preferred method for determining GHG emissions locally. The Air District recommends using MTC's county-specific growth estimates to estimate future VMT.

2.3 Future electricity coefficients

The most recently certified electricity coefficient for the jurisdiction's local utility should be used as the projected electricity coefficient for the future/projection year. Jurisdictions should use electricity coefficients listed in the Local Government Operations Protocol, Appendix G (table G.5). Refer to section 1.7 above for more detailed guidance.

2.4 Accounting for state-level actions

Several measures included in the AB 32 Scoping Plan will impact local GHG emissions and may be taken into account in the GHG emission projection. Of particular importance are the Renewable Portfolio Standard and the Pavley I and II regulations. While other Scoping Plan measures are also relevant, such as the Low Carbon Fuel Standard, because the details of the regulation have not yet been developed, assessing GHG impacts at the local level from these measures is fairly speculative at this time.

2.4.1 Renewable Portfolio Standard

The State of California Renewable Portfolio Standard (RPS) requires electricity providers to increase the portion of electricity they deliver that comes from renewable energy sources to 20% by 2010 and by 33% by 2020. Local governments can develop assumptions on the impact of the RPS on their communities based on information from their local utilities. Most utilities in California (including PG&E) have reported their GHG emissions data to the California Climate Action Reserve (CCAR). The 2006 Power/Utility Reporting Protocol, version 1.0 (PUP) provides information for each utility, including the amount of power produced by renewable energy for any given year. Guidance on how to use this information to estimate the impact of the RPS on a community's future GHG emissions is in development by the Air District and will be forthcoming.

2.4.2 Pavley I and II

Assembly Bill 1493 (Pavley), signed into law in 2002, will require automakers to reduce greenhouse gas emissions from new passenger cars and light trucks beginning in 2011. ARB will implement the law in two phases of increasingly stringent standards. ARB has developed a post-processing tool for EMFAC2007 that incorporates the emissions impacts of Pavley I and II into the tool. In addition, ARB will be releasing EMFAC2010 by the end of the year, with Pavley I and II fully integrated.

2.4.3 SB 375

Although SB 375 is expected to reduce vehicle trips and transportation-related emissions, it should not be included as an emission reduction measure in GHG Reduction Strategies for two reasons: 1) the intent and implementation of SB 375 is likely to overlap with mixed use and transit-oriented development measures included in the Strategy (thus to avoid double-counting), and 2) a technical, defensible analysis of the bill's projected impact on the state or the Bay Area is not available at this time.

3. GHG Mitigation Measures

This guidance applies to addressing project characteristics, as well as mitigation measures. It is recommended that GHG reductions from appropriate policies and measures be applied to projects before entering the mitigation phase.

3.1 Residential and commercial buildings

3.1.1 Green building codes

3.1.1.1 Exceeding Title 24

New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, ventilation, and hard-wired lighting. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

GHG reductions from a percent improvement over Title 24 can be quantified by calculating baseline energy consumption using methodologies based on the California Energy Commission's (CEC) Residential Appliance Saturation Survey (RASS) and Commercial End-Use Survey (CEUS). The CEUS is based on a survey conducted in 2002 for existing commercial buildings in various climate zones. Electricity and natural gas use per square foot for each end use in each building type and climate zone is extracted from the CEUS data. Since the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 regulated energy intensity for each building type.

Data from RASS is used to calculate the total electricity and natural gas use for residential buildings on a per dwelling unit. The RASS study estimates the unit energy consumption (UEC) values for individual households surveyed and also provides the saturation number for each type of end use. The saturation number indicates the proportion of households that have a demand for each type of end-use category. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

RASS and CEUS data are based on CEC Forecasting Climate Zones (FCZs); therefore, differences in project energy usage due to different climates are accounted for. The percent improvement is applied to Title 24 built environment energy uses, and overall GHG emissions are calculated using local utility emission factors. This methodology allows project applicants flexibility in choosing which specific measures they will pursue to achieve the percent reductions (for example, installing higher quality building insulation, or installing a more efficient water heating system), while still making the mitigation commitment at the time of CEQA analysis.

3.1.1.2 LEED and GreenPoint Rated

Local building codes that use requirements referencing LEED building standards and/or GreenPoint Rated may look to those two programs for direction on how to quantify GHG emissions impacts of their respective standards.

With support from the Air District, Build It Green has developed a Climate Calculator (http://www.stopwaste.org/docs/calculator_report_spring_09_update.pdf) to generate data on GHG emissions avoided and other savings. The Climate Calculator produces four sets of data:

- 1) CO₂e data derived from the building's green design features;
- 2) CO₂e data related to the recycling of construction and demolition waste;
- 3) CO₂e data related to the project's location, which quantifies the potential reduction in miles driven by residents who live in more compact, transit-oriented, mixed-use developments; and
- 4) Non-CO₂ savings, including gallons of water, tons of waste, kilowatt-hours of electricity, and therms of natural gas.

The US Green Building Council (USGBC) provides information on how to equate points on the LEED scale to percentage points exceeding energy efficiency standards in Title 24. For a comparison between LEED-NC and LEED-CS and Title 24's 2005 standard, see the USGBC Information Guidelines at <http://www.usgbc.org/ShowFile.aspx?DocumentID=2255>. LEED has not yet updated this comparison to the new 2008 Title 24 energy efficiency standards.

3.2 Transportation

Local governments should use URBEMIS to calculate potential GHG emission reductions from different transportation mitigation measures. In order to use URBEMIS effectively, accurate estimations of trip rates and length (VMT per trip) must be made.

3.3.1 Estimating Trip Rates

The majority of transportation impact analysis conducted for CEQA documents in California apply trip generation rates provided by the Institute of Transportation Engineers (ITE) in their regularly updated report *Trip Generation*. This data is typically based on single-use developments, in suburban locations with ample free parking and with minimal transit service and demand management strategies in place. As a result, the ITE trip generation rates represent upper bound trip generation rates for an individual land use type. Local governments can use local models to fine tune the trip rates beyond what ITE provides.

For some large development projects or general plans, the local or regional travel demand model is used to estimate the number of trips generated as well as trip lengths and vehicle speeds at which the individual trips occur. These models account for whether the trip segment occurs on a freeway or local streets as well as the degree of congestion. The values for trip generation rates and trip lengths using ITE and average trip lengths can be used to assess the model estimates of vehicle trip generation and VMT. These comparisons should recognize that the travel demand models explicitly account for various factors that reduce trip-making and VMT, including the demographic characteristics of the site occupants, location and accessibility of the development site relative to other destinations in the region, the mix of land uses within the site and its surrounding area, and possibly the availability of effective transit service. When performing a comparison using the ITE trip rates and average trip lengths, the reviewer should take into consideration that these factors have already been accounted for in the modeling.

3.3.2 Impacts of Transit-oriented development on trip rates

The Santa Clara County Congestion Management agency has produced guidelines suggesting a 9 percent trip reduction for housing within 2,000 feet of a light-rail commuter-rail station.

The results of a literature review of studies documenting the effectiveness of Transit Oriented Development (TOD) in the reduction of vehicle trips show residents living near transit stations are around 5 times more likely to commute by transit as the average resident worker in the same city.

The Robert Cervero study, *Impacts of Transit Oriented Housing*, includes a survey of 17 transit-oriented developments in five U.S. metropolitan areas that show vehicle trips per dwelling unit substantially below ITE manual estimates. According to the study, over a typical weekday, the surveyed TOD housing projects averaged 47 percent fewer vehicle trips than that estimated by the manual (3.55 versus 6.67). The San Francisco Bay area also averaged vehicle trip generation rates substantially below those estimated by the ITE manual.

3.3.3 Estimating VMT

Baseline VMT for projects should be calculated by multiplying ITE trip rates by the typical trip length. MTC is the best source for local trip length data in the Bay Area.

Discussion note: Some mechanisms that reduce trip generation rates and trip lengths below the standard ITE trip rates and current average trip lengths might be considered to be intrinsic parts of the development proposal rather than mitigation measures, such as project location (e.g., infill or transit oriented development), density, mix of uses, and urban design. These intrinsic attributes of a project should be considered part of the baseline condition and quantified as project design features rather than mitigation. This approach highlights all elements of a project that affect trip generation rates and vehicle miles traveled.

3.3.4 Density impacts on VMT

The report "Transportation Research Board Special Report 298: Driving and the Built Environment Effects of Compact Development on Motorized Travel, Energy Use and CO2 Emissions" examines the relationship between land development patterns and vehicle miles travelled. The report suggest that doubling residential density across a metropolitan area might lower household VMT by 5 to 12 percent, and as much as 25 percent if coupled with higher employment concentrations, significant public transit improvements, mixed uses and other supportive demand management measures.

3.3 Waste

The Air District has created a tool to assist local governments in estimating GHG impacts of project-level measures in the waste sector. This tool, the BAAQMD GHG Model Calculator (see description in 6.2 below), draws coefficients for different waste types from the EPA WARM tool and local waste disposal rates from CalRecycle (formerly the California Integrated Waste Management Board).

3.4 Impacts of multiple policies

Some GHG reduction policies/measures, whether applied in project planning or as mitigation measures, are more effective when used in concert with other measures.

Quantifying the impacts of multiple strategies applied together is a new area of research, without established methodologies. In July of 2010, the California Air Pollution Control Officers Association (CAPCOA) will release a report on GHG mitigation measures quantification that will include a discussion and general approaches for quantifying the “layering” of multiple policies.

3.5 Recommended Tools

3.5.1 URBEMIS

URBEMIS is an emissions model that quantifies construction and operation emissions from land use projects. The Air District recommends URBEMIS as the standard tool for quantifying project related emissions of criteria pollutants and carbon dioxide in proposed land use developments. URBEMIS uses the California Air Resource Board’s EMFAC2007 model for on-road vehicle emissions and OFFROAD2007 for off-road vehicle emissions. URBEMIS provides daily and annual emission reports for NOX, ROG, PM2.5, CO, and CO₂. URBEMIS also quantifies a range of construction, transportation, and area source mitigation measures. The model is free and may be downloaded at <http://www.urbemis.com/>.

3.5.2 GHG Model Calculator

The Air District is developing a model to calculate GHG emissions from land use development projects. Users will be able to import emission results from URBEMIS, an emissions model for land use projects, to quantify GHG emissions not included in URBEMIS such as GHG emissions from electricity use and waste. Users will also be able to apply a range of GHG mitigation measures in the model. The Air District intends for this model to complement URBEMIS in quantifying project related GHG emissions in proposed land use developments. The model will be based as an Excel spreadsheet and will be ready for use in June 2010.

3.5.3 CAPCOA GHG Mitigation Study Report (Environ)

CAPCOA, through a contract with Environ, is producing a technical analysis of GHG reduction estimates for a wide range of mitigation strategies. The final report will contain quantification methodologies, recommended assumptions, GHG reduction estimates, and methodology references for individual measures. The report will provide guidance on how to interpret reduction ranges and assign percentage reductions to characterize land use projects and GHG mitigation measures. The Air District recommends applying any identified emission reductions for a project in URBEMIS and the GHG Model Calculator. Both these models have customizable inputs and a wide range of mitigation measures that may be utilized for GHG reductions. The final report will be for release in June 2010.

3.5.4 Use of local models and methodologies

The Air District encourages local governments to apply local models and methodologies to quantify GHG emissions where appropriate. For example, the URBEMIS model contains a number of customizable inputs for users to apply local conditions and characteristics.

4. **Implementation and Monitoring**

4.1 Implementation plan

The implementation plan is a critical component of the GHG Reduction Strategy. GHG Reduction Strategies should include two-tiered implementation approaches – one approach for overall implementation of the Strategy, and implementation plans for each individual measure (or groups of measures).

4.1.1 Overall implementation plan

The overall implementation plan should include as much detail as possible on the following:

- identification of the department with oversight of coordination of Strategy implementation;
- identification of lead staff charged with coordination of Strategy implementation;
- integrated timeline of implementation of all measures – timeline should take into consideration economic requirements for measures (fiscal year budget allocations, energy savings from specific measures used to fund other measures, etc.); and
- monitoring and reporting approach (see Items 2 and 3 below) that outlines when update reports on the status of implementation of individual measures will occur, as well as the occurrence of updated GHG inventories.

4.1.2 Implementation of individual measures

Implementation strategies for each individual measure (or groups of measures) should include as much of the following detail as possible:

- estimation of staff requirements, including designation of lead staff (or department);
- capital requirements and payback period;
- budget requirements and fiscal year(s) for which budget requests will need to be made;
- potential financing mechanisms if other than municipal budget;
- legislative actions required for implementation (adoption of ordinances, etc.);
- implementation steps and timeline for implementation; and
- all policies and measures in the Strategy that apply to new development projects should be identified so that it is clear whether or not a new project is consistent with the Strategy.

4.2 Re-inventory every 5 years

The Strategy should specify that the GHG emission inventory will be updated at a minimum every 5 years in order to track overall progress toward meeting the GHG emission reduction target. This process helps to establish the community's emission trends, assess and reprioritize the performance of emission reduction measures currently implemented and better inform the emission forecast. The emission inventory update should consist of a full review of emissions from all sectors included in the original inventory and an assessment of progress toward the target.

4.3 Annual report on implementation of strategy

Apart from the periodic emission inventory, the Strategy should include a schedule for annual reporting on the implementation of individual measures. Annual reporting on measures will assist in determining if new developments are in fact being impacted by the Strategy.

4.4 Review of new project consistency with strategy

The Strategy should include a mechanism for identifying and reporting on how consistently the relevant policies and measures in the Strategy have been applied to new development.



California Environmental Quality Act Guidelines Update

Proposed Thresholds of Significance

May 3, 2010

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Bay Area Air Quality Management District

Proposed Air Quality CEQA Thresholds of Significance

1 INTRODUCTION

Bay Area Air Quality Management District (BAAQMD or Air District) staff analyzed various options for California Environmental Quality Act (CEQA) air quality thresholds of significance for use within BAAQMD’s jurisdiction. The analysis and evaluation undertaken by Air District staff is documented in the *Revised Draft Options and Justification Report – California Environmental Quality Act Thresholds of Significance* (Draft Options Report) (BAAQMD October 2009).

Air District staff hosted public workshops in February, April, September and October 2009, and April 2010 at several locations around the Bay Area. Air District staff also hosted additional workshops in each of the nine Bay Area counties specifically designed for, and to solicit input from, local agency staff. In addition, Air District staff met with regional stakeholder groups to discuss and receive input on the threshold options being evaluated. Throughout the course of the public workshops and stakeholder meetings Air District staff received many comments on the various options under consideration. Based on comments received and additional staff analysis, the threshold options and staff-recommended thresholds were further refined. The culmination of this nearly year and a half-long effort was presented in the Proposed Thresholds of Significance Report published on November 2, 2009 as the Air District staff’s proposed air quality thresholds of significance.

The Air District Board of Directors (Board) held public hearings on November 18 and December 2, 2009 and January 6, 2010, to receive comments on staff’s Proposed Thresholds of Significance (November 2, 2009; revised December 7, 2009). After public testimony and Board deliberations, the Board requested staff to present additional options for risk and hazard thresholds for Board consideration. This Report includes risks and hazards threshold options, as requested by the Board, in addition to staff’s previously recommended thresholds of significance. The proposed thresholds presented herein, upon adoption by the Air District Board of Directors, are intended to replace all of the Air District’s currently recommended thresholds. The proposed air quality thresholds of significance, and Board-requested risk and hazard threshold options, are provided in Table 1 at the end of this introduction.

1.1 BAAQMD/CEQA REGULATORY AUTHORITY

The BAAQMD has direct and indirect regulatory authority over sources of air pollution in the San Francisco Bay Area Air Basin (SFBAAB). CEQA requires that public agencies consider the potential adverse environmental impacts of any project that a public agency proposes to carry out, fund or approve. CEQA requires that a lead agency prepare an Environmental Impact Report (EIR) whenever it can be fairly argued (the “fair argument”

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standard), based on substantial evidence,¹ that a project may have a significant effect² on the environment, even if there is substantial evidence to the contrary (CEQA Guidelines §15064). CEQA requires that the lead agency review not only a project's direct effects on the environment, but also the cumulative impacts of a project and other projects causing related impacts. When the incremental effect of a project is cumulatively considerable, the lead agency must discuss the cumulative impacts in an EIR. (CEQA Guidelines §15064).

The "fair argument" standard refers to whether a fair argument can be made that a project may have a significant effect on the environment (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84). The fair argument standard is generally considered a low threshold requirement for preparation of an EIR. The legal standards reflect a preference for requiring preparation of an EIR and for "resolving doubts in favor of environmental review." *Meija v. City of Los Angeles* (2005) 130 Cal. App. 4th 322, 332. "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data." (CEQA Guidelines §15064(b)).

In determining whether a project may have a significant effect on the environment, CEQA Guidelines Section 15064.7 provides that lead agencies may adopt and/or apply "thresholds of significance." A threshold of significance is "an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant" (CEQA Guidelines §15064.7).

While thresholds of significance give rise to a presumption of insignificance, thresholds are not conclusive, and do not excuse a public agency of the duty to consider evidence that a significant effect may occur under the fair argument standard. *Meija*, 130 Cal. App. 4th at 342. "A public agency cannot apply a threshold of significance or regulatory standard 'in a way that forecloses the consideration of any other substantial evidence showing there may be a significant effect.'" *Id.* This means that if a public agency is presented with factual information or other substantial evidence establishing a fair argument that a project may have a significant effect on the environment, the agency must prepare an EIR to study those impacts even if the project's impacts fall below the applicable threshold of significance.

¹ "Substantial evidence" includes facts, reasonable assumptions predicated upon facts, or expert opinions supported by facts, but does not include argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment. Cal. Pub. Res. C. §21080(c); *see also* CEQA Guidelines §15384.

² A "significant effect" on the environment is defined as a "substantial, or potentially substantial, adverse change in the environment." Cal. Pub. Res. C. §21068; *see also* CEQA Guidelines §15382.

Thresholds of significance must be supported by substantial evidence. This Report provides the substantial evidence in support of the thresholds of significance developed by the BAAQMD. If adopted by the BAAQMD Board of Directors, the Air District will recommend that lead agencies within the nine counties of the BAAQMD's jurisdiction use the thresholds of significance in this Report when considering the air quality impacts of projects under their consideration.

1.2 JUSTIFICATION FOR UPDATING CEQA THRESHOLDS

Any analysis of environmental impacts under CEQA includes an assessment of the nature and extent of each impact expected to result from the project to determine whether the impact will be treated as significant or less than significant. CEQA gives lead agencies discretion whether to classify a particular environmental impact as significant. Ultimately, formulation of a standard of significance requires the lead agency to make a policy judgment about where the line should be drawn distinguishing adverse impacts it considers significant from those that are not deemed significant. This judgment must, however, be based on scientific information and other factual data to the extent possible (CEQA Guidelines §15064(b)).

In the sense that advances in science provide new or refined factual data, combined with advances in technology and the gradual improvement or degradation of an environmental resource, the point where an environmental effect is considered significant is fluid over time. Other factors influencing this fluidity include new or revised regulations and standards, and emerging, new areas of concern.

In the ten years since BAAQMD last reviewed its recommended CEQA thresholds of significance for air quality, there have been tremendous changes that affect the quality and management of the air resources in the Bay Area. Traditional criteria air pollutant ambient air quality standards, at both the state and federal levels, have become increasingly more stringent. A new criteria air pollutant standard for fine particulate matter less than 2.5 microns in diameter (PM_{2.5}) has been added to federal and state ambient air quality standards. We have found, through technical advances in impact assessment, that toxic air contaminants are not only worse than previously thought from a health perspective, but that certain communities experience high levels of toxic air contaminants, giving rise to new regulations and programs to reduce the significantly elevated levels of ambient toxic air contaminant concentrations in the Bay Area.

In response to the elevated levels of toxic air contaminants in some Bay Area communities, the Air District created the Community Air Risk Evaluation (CARE) Program. Phase 1 of the BAAQMD's CARE program compiled and analyzed a regional emissions inventory of toxic air contaminants (TACs), including emissions from stationary sources, area sources, and on-road and off-road mobile sources. Phase 2 of the CARE Program conducted regional computer modeling of selected TAC species, species which collectively posed the greatest risk to Bay Area residents. In both Phases 1 and 2, demographic data were combined with estimates of TAC emissions or concentrations to identify communities that are disproportionately impacted from high concentrations of TACs. Bay Area Public Health Officers, in discussions with Air District staff and in comments

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to the Air District’s Advisory Council (February 11, 2009, Advisory Council Meeting on Air Quality and Public Health), have recommended that PM_{2.5}, in addition to TACs, be considered in assessments of community-scale impacts of air pollution.

Another significant issue that affects the quality of life for Bay Area residents is the growing concern with global climate change. In just the past few years, estimates of the global atmospheric temperature and greenhouse gas concentration limits needed to stabilize climate change have been adjusted downward and the impacts of greenhouse gas emissions considered more dire. Previous scientific assessments assumed that limiting global temperature rise to 2-3°C above pre-industrial levels would stabilize greenhouse gas concentrations in the range of 450-550 parts per million (ppm) of carbon dioxide-equivalent (CO₂e). Now the science indicates that a temperature rise of 2°C would not prevent dangerous interference with the climate system. Recent scientific assessments suggest that global temperature rise should be kept below 2°C by stabilizing greenhouse gas concentrations below 350 ppm CO₂e, a significant reduction from the current level of 385 ppm CO₂e.

For the reasons stated above, and to further the goals of other District programs such as encouraging transit-oriented and infill development, BAAQMD has undertaken an effort to review all of its currently-recommended CEQA thresholds, revise them as appropriate, and develop new thresholds where appropriate. The overall goal of this effort is to develop CEQA significance criteria that ensure new development implements appropriate and feasible emission reduction measures to mitigate significant air quality impacts. The Air District’s recommended CEQA significance thresholds have been vetted through a public review process and will be presented to the BAAQMD Board of Directors for adoption.

Table 1 – Proposed Air Quality CEQA Thresholds of Significance			
Pollutant	Construction-Related	Operational-Related	
Project-Level			
Criteria Air Pollutants and Precursors (Regional)	Average Daily Emissions (lb/day)	Average Daily Emissions (lb/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀ (exhaust)	82	82	15
PM _{2.5} (exhaust)	54	54	10
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

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Table 1 – Proposed Air Quality CEQA Thresholds of Significance		
Pollutant	Construction-Related	Operational-Related
GHGs Projects other than Stationary Sources	None	Compliance with Qualified Greenhouse Gas Reduction Strategy OR 1,100 MT of CO ₂ e/yr OR 4.6 MT CO ₂ e/SP/yr (residents + employees)
GHGs Stationary Sources	None	10,000 MT/yr
Risks and Hazards – New Source (All Areas) (Individual Project) <u>Staff Proposal</u>	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM _{2.5} increase: > 0.3 µg/m ³ annual average <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor
Risks and Hazards – New Receptor (All Areas) (Individual Project) <u>Staff Proposal</u>	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM _{2.5} increase: > 0.3 µg/m ³ annual average <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor
Risks and Hazards (Individual Project) <u>Tiered Thresholds Option</u>	Same as Operational Thresholds*	<u>Impacted Communities: Siting a New Source</u> Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >5.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM _{2.5} increase: > 0.2 µg/m ³ annual average <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor

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Table 1 – Proposed Air Quality CEQA Thresholds of Significance		
Pollutant	Construction-Related	Operational-Related
<p>Risks and Hazards (Individual Project)</p> <p><u>Tiered Thresholds Option</u> (Continued)</p>	<p>Same as Operational Thresholds*</p>	<p><u>Impacted Communities: Siting a New Receptor</u> <u>All Other Areas: Siting a New Source or Receptor</u></p> <p>Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM_{2.5} increase: > 0.3 µg/m³ annual average</p> <p><u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor</p>
<p>Risks and Hazards – New Source (All Areas) (Cumulative Thresholds)</p>	<p>Same as Operational Thresholds*</p>	<p>Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) PM_{2.5}: > 0.8 µg/m³ annual average (from all local sources)</p> <p><u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor</p>
<p>Risks and Hazards – New Receptor (All Areas) (Cumulative Thresholds)</p>	<p>Same as Operational Thresholds*</p>	<p>Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) PM_{2.5}: > 0.8 µg/m³ annual average (from all local sources)</p> <p><u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor</p>
<p>Accidental Release of Acutely Hazardous Air Pollutants</p>	<p>None</p>	<p>Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant</p>
<p>Odors</p>	<p>None</p>	<p>Complaint History—Five confirmed complaints per year averaged over three years</p>

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Table 1 – Proposed Air Quality CEQA Thresholds of Significance		
Pollutant	Construction-Related	Operational-Related
Plan-Level		
Criteria Air Pollutants and Precursors	None	<ol style="list-style-type: none"> 1. Consistency with Current Air Quality Plan control measures 2. Projected VMT or vehicle trip increase is less than or equal to projected population increase
GHGs	None	Compliance with Qualified Greenhouse Gas Reduction Strategy (or similar criteria included in a General Plan) OR 6.6 MT CO ₂ e/ SP/yr (residents + employees)
Risks and Hazards	None	<ol style="list-style-type: none"> 1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas) 2. Overlay zones of at least 500 feet (or Air District-approved modeled distance) from all freeways and high volume roadways
Odors	None	Identify the location of existing and planned sources of odors
Accidental Release of Acutely Hazardous Air Pollutants	None	None
Regional Plans (Transportation and Air Quality Plans)		
GHGs, Criteria Air Pollutants and Precursors, and Toxic Air Contaminants	None	No net increase in emissions
Notes: CO = carbon monoxide; CO ₂ e = carbon dioxide equivalent; GHGs = greenhouse gases; lb/day = pounds per day; MT = metric tons; NO _x = oxides of nitrogen; PM _{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM ₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases; SO ₂ = sulfur dioxide; SP = service population; TACs = toxic air contaminants; TBP = toxic best practices; tons/day = tons per day; tpy = tons per year; yr = year. * Note: The Air District recommends that for construction projects that are less than one year duration, Lead Agencies should annualize impacts over the scope of actual days that peak impacts are to occur, rather than the full year.		

2 GREENHOUSE GAS THRESHOLDS

BAAQMD does not currently have an adopted threshold of significance for GHG emissions. BAAQMD currently recommends that lead agencies quantify GHG emissions resulting from new development and apply all feasible mitigation measures to lessen the potentially significant adverse impacts. One of the primary objectives in updating the current CEQA Guidelines is to identify a GHG significance threshold, analytical

methodologies, and mitigation measures to ensure new land use development meets its fair share of the emission reductions needed to address the cumulative environmental impact from GHG emissions. GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. As reviewed herein, climate change impacts include an increase in extreme heat days, higher ambient concentrations of air pollutants, sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts. No single land use project could generate enough GHG emissions to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts.

2.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Type	Proposed Thresholds
Projects other than Stationary Sources	Compliance with Qualified Greenhouse Gas Reduction Strategy OR 1,100 MT of CO ₂ e/yr OR 4.6 MT CO ₂ e/SP/yr (residents + employees)
Stationary Sources	10,000 MT of CO ₂ e/yr
Plans	Compliance with Qualified Greenhouse Gas Reduction Strategy (or similar criteria included in a General Plan) OR 6.6 MT CO ₂ e/SP/yr (residents + employees)
Regional Plans (Transportation and Air Quality Plans)	No net increase in GHG emissions

2.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. If a project would generate GHG emissions above the threshold level, it would be considered to contribute substantially to a cumulative impact, and would be considered significant. If mitigation can be applied to lessen the emissions such that the project meets its share of emission reductions needed to address the cumulative impact, the project would normally be considered less than significant.

As explained in the District's *Revised Draft Options and Justifications Report* (BAAQMD 2009), there are several types of thresholds that may be supported by

substantial evidence and be consistent with existing California legislation and policy to reduce statewide GHG emissions. In determining which thresholds to recommend, Staff studied numerous options, relying on reasonable, environmentally conservative assumptions on growth in the land use sector, predicted emissions reductions from statewide regulatory measures and resulting emissions inventories, and the efficacies of GHG mitigation measures. The thresholds recommended herein were chosen based on the substantial evidence that such thresholds represent quantitative and/or qualitative levels of GHG emissions, compliance with which means that the environmental impact of the GHG emissions will normally not be cumulatively considerable under CEQA. Compliance with such thresholds will be part of the solution to the cumulative GHG emissions problem, rather than hinder the state's ability to meet its goals of reduced statewide GHG emissions. Staff notes that it does not believe there is only one threshold for GHG emissions that can be supported by substantial evidence.

GHG CEQA significance thresholds recommended herein are intended to serve as interim levels during the implementation of the AB 32 Scoping Plan and SB 375, which will occur over time. Until AB 32 has been fully implemented in terms of adopted regulations, incentives, and programs and until SB 375 required plans have been fully adopted, or the California Air Resources Board (ARB) adopts a recommended threshold, the BAAQMD recommends that local agencies in the Bay Area apply the GHG thresholds recommended herein.

If left unchecked, GHG emissions from new land use development in California will result in a cumulatively considerable amount of GHG emissions and a substantial conflict with the State's ability to meet the goals within AB 32. Thus, BAAQMD proposes to adopt interim GHG thresholds for CEQA analysis, which can be used by lead agencies within the Bay Area. This would help lead agencies navigate this dynamic regulatory and technological environment where the field of analysis has remained wide open and inconsistent. BAAQMD's framework for developing a GHG threshold for land development projects that is based on policy and substantial evidence follows.

2.3.1 SCIENTIFIC AND REGULATORY JUSTIFICATION

Climate Science Overview

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, chlorofluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is *extremely unlikely* that global climate change of the past 50 years can be explained without the contribution from human activities (IPCC 2007a).

According to Article 2 of the United Nations Framework Convention on Climate Change (UNFCCC), "Avoiding Dangerous Climate Change" means: "*stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.*" Dangerous climate change defined

in the UNFCCC is based on several key indicators including the potential for severe degradation of coral reef systems, disintegration of the West Antarctic Ice Sheet, and shut down of the large-scale, salinity- and thermally-driven circulation of the oceans. (UNFCCC 2009). The global atmospheric concentration of carbon dioxide has increased from a pre-industrial value of about 280 ppm to 379 ppm in 2005 (IPCC 2007a). “Avoiding dangerous climate change” is generally understood to be achieved by stabilizing global average temperatures between 2 and 2.4°C above pre-industrial levels. In order to limit temperature increases to this level, ambient global CO₂ concentrations must stabilize between 350 and 400 ppm (IPCC 2007b).

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra’s snowpack, further exacerbate California’s air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill 32, the California Global Warming Solutions Act of 2006, which set the 2020 greenhouse gas emissions reduction goal into law. AB 32 finds and declares that “Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020, and establishes regulatory, reporting, voluntary, and market mechanisms to achieve quantifiable reductions in GHG emissions to meet the statewide goal.

In December of 2008, ARB adopted its *Climate Change Scoping Plan (Scoping Plan)*, which is the State’s plan to achieve GHG reductions in California, as required by AB 32 (ARB 2008). The Scoping Plan contains strategies California will implement to achieve a reduction of 169 MMT CO₂e emissions, or approximately 28 percent from the state’s projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT of CO₂e, or almost 10 percent, from 2002-2004 average emissions), so that the state can return to 1990 emission levels, as required by AB 32.

While the Scoping Plan establishes the policy intent to control numerous GHG sources through regulatory, incentive, and market means, given the early phase of implementation and the level of control that local CEQA lead agencies have over numerous GHG sources, CEQA is an important and supporting tool in achieving GHG reductions overall in compliance with AB 32. In this spirit, BAAQMD is considering the adoption of thresholds of significance for GHG emissions for stationary source and land use development projects.

Senate Bill 375

Senate Bill (SB) 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). ARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years, but can be updated every four years if advancements in emission technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects would not be eligible for State funding programmed after January 1, 2012. New provisions of CEQA incentivize qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

The revised District CEQA Guidelines includes methodology consistent with the recently updated State CEQA Guidelines, which provides that certain residential and mixed use projects, and transit priority projects consistent with an applicable SCS or APS need not analyze GHG impacts from cars and light duty trucks (CEQA Guidelines §15183.5(c)).

2.3.2 PROJECT-LEVEL GHG THRESHOLDS

Staff recommends setting GHG significance thresholds based on AB 32 GHG emission reduction goals while taking into consideration emission reduction strategies outlined in ARB's Scoping Plan. Staff proposes two quantitative thresholds for land use projects: a bright line threshold based on a "gap" analysis and an efficiency threshold based on emission levels required to be met in order to achieve AB 32 goals.

Staff also proposes one qualitative threshold for land use projects: if a project complies with a Qualified Greenhouse Gas Reduction Strategy (as defined in Section 2.3.4 below) that addresses the project it would be considered less than significant. As explained in detail in Section 2.3.4 below, compliance with a Qualified Greenhouse Gas Reduction Strategy (or similar adopted policies, ordinances and programs), would provide the evidentiary basis for making CEQA findings that development consistent with the plan would result in feasible, measureable, and verifiable GHG reductions consistent with broad state goals such that projects approved under qualified Greenhouse Gas Reduction Strategies or equivalent demonstrations would achieve their fair share of GHG emission reductions.

2.3.2.1 LAND USE PROJECTS "GAP-BASED" THRESHOLD

Staff took eight steps in developing this threshold approach, which are summarized here and detailed in the sections that follow. It should be noted that the "gap-based approach" used for threshold development is a conservative approach that focuses on a limited set of state mandates that appear to have the greatest potential to reduce land use development-

related GHG emissions at the time of this writing. It is also important to note that over time, as the effectiveness of the State's implementation of AB 32 (and SB 375) progresses, BAAQMD will need to reconsider the extent of GHG reductions needed over and above those from the implementation thereof for the discretionary approval of land use development projects. Although there is an inherent amount of uncertainty in the estimated capture rates (i.e., frequency at which project-generated emissions would exceed a threshold and would be subject to mitigation under CEQA) and the aggregate emission reductions used in the gap analysis, they are based on BAAQMD's expertise, the best available data, and use conservative assumptions for the amount of emission reductions from legislation in derivation of the gap (e.g., only adopted legislation was relied upon). This approach is intended to attribute an appropriate share of GHG emission reductions necessary to reach AB 32 goals to new land use development projects in BAAQMD's jurisdiction that are evaluated pursuant to CEQA.

Step 1 Estimate from ARB's statewide GHG emissions inventory the growth in emissions between 1990 and 2020 attributable to "land use-driven" sectors of the emission inventory as defined by OPR's guidance document (*CEQA and Climate Change*). Land use-driven emission sectors include Transportation (On-Road Passenger Vehicles; On-Road Heavy Duty), Electric Power (Electricity; Cogeneration), Commercial and Residential (Residential Fuel Use; Commercial Fuel Use) and Recycling and Waste (Domestic Waste Water Treatment).

Result: 1990 GHG emissions were 295.53 MMT CO₂e/yr and projected 2020 business-as-usual GHG emissions would be 400.22 MMT CO₂e/yr; thus a 26.2 percent reduction from statewide land use-driven GHG emissions would be necessary to meet the AB 32 goal of returning to 1990 emission levels by 2020. (See Table 2)

Step 2 Estimate the anticipated GHG emission reductions affecting the same land use-driven emissions inventory sectors associated with adopted statewide regulations identified in the AB 32 Scoping Plan.

Result: Estimated a 23.9 percent reduction can be expected in the land use-driven GHG emissions inventory from adopted Scoping Plan regulations, including AB 1493 (Pavley), LCFS, Heavy/Medium Duty Efficiency, Passenger Vehicle Efficiency, Energy-Efficiency Measures, Renewable Portfolio Standard, and Solar Roofs. (See Table 3)

Step 3 Determine any short fall or "gap" between the 2020 statewide emission inventory estimates and the anticipated emission reductions from adopted Scoping Plan regulations. This "gap" represents additional GHG emission reductions needed statewide from the land use-driven emissions inventory sectors, which represents new land use development's share of the emission reductions needed to meet statewide GHG emission reduction goals.

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Result: With the 23.9 percent reductions from AB 32 Scoping Measures, there is a “gap” of 2.3 percent in necessary additional GHG emissions reductions to meet AB 32 goals of a 26.2 percent reduction from statewide land use-driven GHG emissions to return to 1990 levels in 2020. (See Table 2)

- Step 4 Determine the percent reduction this “gap” represents in the “land use-driven” emissions inventory sectors from BAAQMD’s 2020 GHG emissions inventory. Identify the mass of emission reductions needed in the SFBAAB from land use-driven emissions inventory sectors.

Result: Estimated that a 2.3 percent reduction in BAAQMD’s projected 2020 emissions projections requires emissions reductions of 1.6 MMT CO₂e/yr from the land use-driven sectors. (See Table 4)

- Step 5 Assess BAAQMD’s historical CEQA database (2001-2008) to determine the frequency distribution trend of project sizes and types that have been subject to CEQA over the past several years.

Result: Determined historical patterns of residential, commercial and industrial development by ranges of average sizes of each development type. Results were used in Step 6 below to distribute anticipated Bay Area growth among different future project types and sizes.

- Step 6 Forecast new land use development for the Bay Area using DOF/EDD population and employment projections and distribute the anticipated growth into appropriate land use types and sizes needed to accommodate the anticipated growth (based on the trend analysis in Step 5 above). Translate the land use development projections into land use categories consistent with those contained in the Urban Emissions Model (URBEMIS).

Result: Based on population and employment projections and the trend analysis from Step 5 above, forecasted approximately 4,000 new development projects, averaging about 400 projects per year through 2020 in the Bay Area.

- Step 7 Estimate the amount of GHG emissions from each land use development project type and size using URBEMIS and post-model manual calculation methods (for emissions not included in URBEMIS). Determine the amount of GHG emissions that can reasonably and feasibly be reduced through currently available mitigation measures (“mitigation effectiveness”) for future land use development projects subject to CEQA (based on land use development projections and frequency distribution from Step 6 above).

Result: Based on the information available and on sample URBEMIS calculations, found that mitigation effectiveness of between 25 and 30 percent is feasible.

- Step 8 Conduct a sensitivity analysis of the numeric GHG mass emissions threshold needed to achieve the desired emissions reduction (i.e., “gap”) determined in Step 4. This mass emission GHG threshold is that which would be needed to achieve the emission reductions necessary by 2020 to meet the Bay Area’s share of the statewide “gap” needed from the land use-driven emissions inventory sectors.

Result: The results of the sensitivity analysis conducted in Step 8 found that reductions between about 125,000 MT/yr (an aggregate of 1.3 MMT in 2020) and over 200,000 MT/yr (an aggregate of over 2.0 MMT in 2020) were achievable and feasible. A mass emissions threshold of 1,100 MT of CO₂e/yr would result in approximately 59 percent of all projects being above the significance threshold (e.g., this is approximately the operational GHG emissions that would be associated with a 60 residential unit subdivision) and must implement feasible mitigation measures to meet CEQA requirements. With an estimated 26 percent mitigation effectiveness, the 1,100 MT threshold would achieve 1.6 MMT CO₂e/yr in GHG emissions reductions.

2.3.2.2 DETAILED BASIS AND ANALYSIS

Derivation of Greenhouse Gas Reduction Goal

To meet the target emissions limit established in AB 32 (equivalent to levels in 1990), total GHG emissions would need to be reduced by approximately 28 percent from projected 2020 forecasts (ARB 2009a). The AB 32 Scoping Plan is ARB’s plan for meeting this mandate (ARB 2008). While the Scoping Plan does not specifically identify GHG emission reductions from the CEQA process for meeting AB 32 derived emission limits, the scoping plan acknowledges that “other strategies to mitigate climate change . . . should also be explored.” The Scoping Plan also acknowledges that “Some of the measures in the plan may deliver more emission reductions than we expect; others less . . . and new ideas and strategies will emerge.” In addition, climate change is considered a significant environmental issue and, therefore, warrants consideration under CEQA. SB 97 represents the State Legislature’s confirmation of this fact, and it directed the Governor’s Office of Planning and Research (OPR) to develop CEQA Guidelines for evaluation of GHG emissions impacts and recommend mitigation strategies. In response, OPR released the *Technical Advisory: CEQA and Climate Change* (OPR 2008), and proposed revisions to the State CEQA guidelines (April 14, 2009) for consideration of GHG emissions. The California Natural Resources Agency adopted the proposed State CEQA Guidelines revisions on December 30, 2009 and the revisions were effective beginning March 18, 2010. It is known that new land use development must also do its fair share toward achieving AB 32 goals (or, at a minimum, should not hinder the State’s progress toward the mandated emission reductions).

Foreseeable Scoping Plan Measures Emission Reductions and Remaining “Gap”

Step 1 of the Gap Analysis entailed estimating from ARB’s statewide GHG inventory the growth in emissions between 1990 and 2020 attributable to land use driven sectors of the emissions inventory. As stated above, to meet the requirements set forth in AB 32 (i.e., achieve California’s 1990-equivalent GHG emissions levels by 2020) California would need to achieve an approximate 28 percent reduction in emissions across all sectors of the GHG emissions inventory compared with 2020 projections. However, to meet the AB 32 reduction goals in the emissions sectors that are related to land use development (e.g., on-road passenger and heavy-duty motor vehicles, commercial and residential area sources [i.e., natural gas], electricity generation/consumption, wastewater treatment, and water distribution/consumption), staff determined that California would need to achieve an approximate 26 percent reduction in GHG emissions from these land use-driven sectors (ARB 2009a) by 2020 to return to 1990 land use emission levels.

Next, in Step 2 of the Gap Analysis, Staff determined the GHG emission reductions within the land use-driven sectors that are anticipated to occur from implementation of the Scoping Plan measures statewide, which are summarized in Table 2 and described below. Since the GHG emission reductions anticipated with the Scoping Plan were not accounted for in ARB’s or BAAQMD’s 2020 GHG emissions inventory forecasts (i.e., business as usual), an adjustment was made to include (i.e., give credit for) GHG emission reductions associated with key Scoping Plans measures, such as the Renewable Portfolio Standard, improvements in energy efficiency through periodic updates to Title 24, AB 1493 (Pavley) (which recently received a federal waiver to allow it to be enacted in law), the Low Carbon Fuel Standard (LCFS), and other measures. With reductions from these State regulations (Scoping Plan measures) taken into consideration and accounting for an estimated 23.9 percent reduction in GHG emissions, in Step 3 of the Gap Analysis Staff determined that the Bay Area would still need to achieve an additional 2.3 percent reduction from projected 2020 GHG emissions to meet the 1990 GHG emissions goal from the land-use driven sectors. This necessary 2.3 percent reduction in projected GHG emissions from the land use sector is the “gap” the Bay Area needs to fill to do its share to meet the AB 32 goals. Refer to the following explanation and Tables 2 through 4 for data used in this analysis.

Because the transportation sector is the largest emissions sector of the state’s GHG emissions inventory, it is aggressively targeted in early actions and other priority actions in the Scoping Plan including measures concerning gas mileage (Pavley), fuel carbon intensity (LCFS) and vehicle efficiency measures.

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Table 2 – California 1990, 2002-2004, and 2020 Land Use Sector GHG¹ (MMT CO ₂ e/yr)				
Sector	1990 Emissions	2002-2004 Average	2020 BAU Emissions Projections	% of 2020 Total
Transportation	137.98	168.66	209.06	52%
On-Road Passenger Vehicles	108.95	133.95	160.78	40%
On-Road Heavy Duty	29.03	34.69	48.28	12%
Electric Power	110.63	110.04	140.24	35%
Electricity	95.39	88.97	107.40	27%
Cogeneration ²	15.24	21.07	32.84	8%
Commercial and Residential	44.09	40.96	46.79	12%
Residential Fuel Use	29.66	28.52	32.10	8%
Commercial Fuel Use	14.43	12.45	14.63	4%
Recycling and Waste¹	2.83	3.39	4.19	1%
Domestic Wastewater Treatment	2.83	3.39	4.19	1%
TOTAL GROSS EMISSIONS	295.53	323.05	400.22	
% Reduction Goal from Statewide land use driven sectors (from 2020 levels to reach 1990 levels in these emission inventory sectors)			26.2%	
% Reduction from AB32 Scoping Plan measures applied to land use sectors (see Table 3)			-23.9%	
% Reduction needed statewide beyond Scoping Plan measures (Gap)			2.3%	
Notes: MMT CO ₂ e /yr = million metric tons of carbon dioxide equivalent emissions per year.				
¹ Landfills not included. See text.				
² Cogeneration included due to many different applications for electricity, in some cases provides substantial power for grid use, and because electricity use served by cogeneration is often amenable to efficiency requirements of local land use authorities.				
Sources: Data compiled by EDAW and ICF Jones & Stokes from ARB data.				

Pavley Regulations. The AB 32 Scoping Plan assigns an approximate 20 percent reduction in emissions from passenger vehicles associated with the implementation of AB 1493. The AB 32 Scoping Plan also notes that “AB 32 specifically states that if the Pavley regulations do not remain in effect, ARB shall implement alternative regulations to control mobile sources to achieve equivalent or greater reductions of greenhouse gas emissions (HSC §38590).” Thus, it is reasonable to assume full implementation of AB 1493 standards, or equivalent programs that would be implemented by ARB. Furthermore, on April 1, 2010, U.S. EPA and the Department of Transportation’s National Highway Safety Administration (NHTSA) announced a joint final rule establishing a national program that will dramatically reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States after 2011. Under this national program, automobile manufacturers will be able to build a single light-duty national fleet that satisfies all requirements under both the national program and the standards of California and other states. Nonetheless, BAAQMD may need to revisit this methodology as the federal standards come on line to ensure that vehicle standards are as aggressive as contemplated in development of this threshold.

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Table 3 – 2020 Land Use Sector GHG Emission Reductions from State Regulations and AB 32 Measures				
Affected Emissions Source	California Legislation	% Reduction from 2020 GHG inventory	End Use Sector (% of Bay Area LU Inventory)	Scaled % Emissions Reduction (credit)
Mobile	AB 1493 (Pavley)	19.7%	On road passenger/light truck transportation (45%)	8.9%
	LCFS	7.2%	On road passenger/light truck transportation (45%)	3.2%
	LCFS	7.2%	On road Heavy/Medium Duty Transportation (5%)	0.4%
	Heavy/Medium Duty Efficiency	2.9%	On road Heavy/Medium Duty Transportation (5%)	0.2%
	Passenger Vehicle Efficiency	2.8%	On road passenger/light truck transportation (45%)	1.3%
Area	Energy-Efficiency Measures	9.5%	Natural gas (Residential, 10%)	1.0%
			Natural gas (Non-residential, 13%)	1.2%
Indirect	Renewable Portfolio Standard	21.0%	Electricity (excluding cogen) (17%)	3.5%
	Energy-Efficiency Measures	15.7%	Electricity (26%)	4.0%
	Solar Roofs	1.5%	Electricity (excluding cogen) (17%)	0.2%
Total credits given to land use-driven emission inventory sectors from Scoping Plan measures				23.9%
Notes: AB = Assembly Bill; LCFS = Low Carbon Fuel Standard; SB = Senate Bill; RPS = Renewable Portfolio Standard				
Please refer to Appendix D for detailed calculations. Sources: Data compiled by ICF Jones & Stokes.				

LCFS. According to the adopted LCFS rule (CARB, April 2009), the LCFS is expected to result in approximately 10 percent reduction in the carbon intensity of transportation fuels. However, a portion of the emission reductions required from the LCFS would be achieved over the life cycle of transportation fuel production rather than from mobile-source emission factors. Based on CARB's estimate of nearly 16 MMT reductions in on-road emissions from implementation of the LCFS and comparison to the statewide on-road emissions sector, the LCFS is assumed to result in a 7.2 percent reduction compared to 2020 BAU conditions (CARB 2009e).

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Table 4 – SFBAAB 1990, 2007, and 2020 Land Use Sector GHG Emissions Inventories and Projections (MMT CO₂e/yr)				
Sector	1990 Emissions	2007 Emissions	2020 Emissions Projections	% of 2020 Total ²
Transportation	26.1	30.8	35.7	50%
On-Road Passenger Vehicles	23.0	27.5	32.0	
On-Road Heavy Duty	3.1	3.3	3.7	
Electric Power	25.1	15.2	18.2	26%
Electricity	16.5	9.9	11.8	
Cogeneration	8.6	5.3	6.4	
Commercial and Residential	8.9	15.0	16.8	24%
Residential Fuel Use	5.8	7.0	7.5	
Commercial Fuel Use	3.1	8.0	9.3	
Recycling and Waste¹	0.2	0.4	0.4	1%
Domestic Waste Water Treatment	0.2	0.4	0.4	
TOTAL GROSS EMISSIONS	60.3	61.4	71.1	
SFBAAB's "Fair Share" % Reduction (from 2020 levels to reach 1990 levels) with AB-32 Reductions (from Table 3)			2.3%	
SFBAAB's Equivalent Mass Emissions Land Use Reduction Target at 2020 (MMT CO ₂ e/yr)			1.6	
Notes: MMT CO ₂ e /yr = million metric tons of carbon dioxide equivalent emissions per year; SFBAAB = San Francisco Bay Area Air Basin.				
¹ Landfills not included.				
² Percentages do not sum exactly to 100% in table due to rounding. Please refer to Appendix D for detailed calculations.				
Sources: Data compiled by EDAW 2009, ICF Jones & Stokes 2009, BAAQMD 2008.				

Renewable Portfolio Standard, Energy Efficiency and Solar Roofs. Energy efficiency and renewable energy measures from the Scoping Plan were also included in the gap analysis. The Renewable Portfolio Standard (rules) will require the renewable energy portion of the retail electricity portfolio to be 33 percent in 2020. For PG&E, the dominant electricity provider in the Basin, approximately 12 percent of their current portfolio qualifies under the RPS rules and thus the gain by 2020 would be approximately 21 percent. The Scoping Plan also estimates that energy efficiency gains with periodic improvement in building and appliance energy standards and incentives will reach 10 to 15 percent for natural gas and electricity respectively. The final state measure included in this gap analysis is the solar roof initiative, which is estimated to result in reduction of the overall electricity inventory of 1.5 percent.

Landfill emissions are excluded from this analysis. While land use development does generate waste related to both construction and operations, the California Integrated Waste Management Board (CIWMB) has mandatory diversion requirements that will, in all probability, increase over time to promote waste reductions, reuse, and recycle. The Bay Area has relatively high levels of waste diversion and extensive recycling efforts. Further, ARB has established and proposes to increase methane capture requirements for all major landfills. Thus, at this time, landfill emissions associated with land use

development waste generation is not included in the land use sector inventory used to develop this threshold approach.

Industrial stationary sources thresholds were developed separately from the land use threshold development using a market capture approach as described below. However, mobile source and area source emissions, as well as indirect electricity emissions that derive from industrial use are included in the land use inventory above as these particular activities fall within the influence of local land use authorities in terms of the affect on trip generation and energy efficiency.

AB 32 mandates reduction to 1990-equivalent GHG levels by 2020, with foreseeable emission reductions from State regulations and key Scoping Plan measures taken into account, were applied to the land use-driven emission sectors within the SFBAAB (i.e., those that are included in the quantification of emissions from a land use project pursuant to a CEQA analysis [on-road passenger vehicles, commercial and residential natural gas, commercial and residential electricity consumption, and domestic waste water treatment], as directed by OPR in the Technical Advisory: *Climate Change and CEQA* [OPR 2008]). This translates to a 2.3 percent gap in necessary GHG emission reductions by 2020 from these sectors.

2.3.2.3 LAND USE PROJECTS BRIGHT LINE THRESHOLD

In Steps 4 and 5 of the gap analysis, Staff determined that applying a 2.3 percent reduction to these land use emissions sectors in the SFBAAB's GHG emissions inventory would result in an equivalent fair share of 1.6 million metric tons per year (MMT/yr) reductions in GHG emissions from new land use development. As additional regulations and legislation aimed at reducing GHG emissions from land use-related sectors become available in the future, the 1.6 MMT GHG emissions reduction goal may be revisited and recalculated by BAAQMD.

In order to derive the 1.6 MMT "gap," a projected development inventory for the next ten years in the SFBAAB was calculated. (See Table 4 and *Revised Draft Options and Justifications Report* (BAAQMD 2009).) CO₂e emissions were modeled for projected development in the SFBAAB and compiled to estimate the associated GHG emissions inventory. The GHG (i.e., CO₂e) CEQA threshold level was adjusted for projected land use development that would occur within BAAQMD's jurisdiction over the period from 2010 through 2020.

Projects with emissions greater than the threshold would be required to mitigate to the threshold level or reduce project emissions by a percentage (mitigation effectiveness) deemed feasible by the Lead Agency under CEQA compared to a base year condition. The base year condition is defined by an equivalent size and character of project with annual emissions using the defaults in URBEMIS and the California Climate Action Registry's General Reporting Protocol for 2008. By this method, land use project mitigation subject to CEQA would help close the "gap" remaining after application of the key regulations and measures noted above supporting overall AB 32 goals.

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This threshold takes into account Steps 1-8 of the gap analysis described above to arrive at a numerical mass emissions threshold. Various mass emissions significance threshold levels (i.e., bright lines) could be chosen based on the mitigation effectiveness and performance anticipated to be achieved per project to meet the aggregate emission reductions of 1.6 MMT needed in the SFBAAB by 2020. (See Table 5 and *Revised Draft Options and Justifications Report* (BAAQMD 2009).) Staff recommends a 1,100 MT CO₂e per year threshold. Choosing a 1,100 MT mass emissions significance threshold level (equivalent to approximately 60 single-family units), would result in about 59 percent of all projects being above the significance threshold and having to implement feasible mitigation measures to meet their CEQA obligations. These projects account for approximately 92 percent of all GHG emissions anticipated to occur between now and 2020 from new land use development in the SFBAAB.

Project applicants and lead agencies could use readily available computer models to estimate a project's GHG emissions, based on project specific attributes, to determine if they are above or below the bright line numeric threshold. With this threshold, projects that are above the threshold level, after consideration of emission-reducing characteristics of the project as proposed, would have to reduce their emissions to below the threshold to be considered less than significant.

Establishing a "bright line" to determine the significance of a project's GHG emissions impact provides a level of certainty to lead agencies in determining if a project needs to reduce its GHG emissions through mitigation measures and when an EIR is required.

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Table 5 – Operational GHG Threshold Sensitivity Analysis

Option	Mitigation Effectiveness Assumptions				Mass Emission Threshold Level (MT CO ₂ e/yr)	% of Projects Captured (>threshold)	% of Emissions Captured (> threshold)	Emissions Reduction per year (MT/yr)	Aggregate Emissions Reduction (MMT) at 2020	Threshold Project Size Equivalent (single family dwelling units)
	Performance Standards Applied to All Projects with Emissions < Threshold Level	Mitigation Effectiveness Applied to Emissions > Threshold Level	Mass Emission Threshold Level (MT CO ₂ e/yr)	% of Projects Captured (>threshold)						
1A	N/A	30%	975	60%	93%	201,664	2.0	53		
1A	N/A	25%	110	96%	100%	200,108	2.0	66		
1A	N/A	30%	1,225	21%	67%	159,276	1.6	67		
1A	N/A	26%	1,100	59%	92%	159,877	1.6	60		
1A	N/A	30%	2,000	14%	61%	143,418	1.4	109		
1A	N/A	25%	1,200	58%	92%	136,907	1.4	66		
1A	N/A	30%	3,000	10%	56%	127,427	1.3	164		
1A	N/A	25%	1,500	20%	67%	127,303	1.3	82		
1B	26%	N/A	N/A	100%	100%	208,594	2.1	N/A ¹		
1C	5%	30%	1,900	15%	62%	160,073	1.6	104		
1C	10%	25%	1,250	21%	67%	159,555	1.6	68		
1C	5%	30%	3,000	10%	56%	145,261	1.5	164		
1C	10%	25%	2,000	4%	61%	151,410	1.5	109		
1C	10%	30%	10,000	2%	33%	125,271	1.3	547		

Notes: MMT = million metric tons per year. MT CO₂e/yr = metric tons of carbon dioxide equivalent emissions per year. MT/yr = metric tons per year. N/A = not applicable.
¹ Any project subject to CEQA would trigger this threshold.
Please refer to Appendix E for detailed calculations.
Source: Data modeled by ICF Jones & Stokes.

2.3.2.4 LAND USE PROJECTS EFFICIENCY-BASED THRESHOLD

GHG efficiency metrics can also be utilized as thresholds to assess the GHG efficiency of a project on a per capita basis (residential only projects) or on a “service population” basis (the sum of the number of jobs and the number of residents provided by a project) such that the project will allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal (allowable emissions), by the estimated 2020 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32. Staff believes it is more appropriate to base the land use efficiency threshold on the service population metric for the land use-driven emission inventory. This approach is appropriate because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use) and uses only the land use emissions inventory that is comprised of all land use projects. Staff will provide the methodology to calculate a project’s GHG emissions in the revised CEQA Guidelines, such as allowing infill projects up to a 50 percent or more reduction in daily vehicle trips if the reduction can be supported by close proximity to transit and support services, or a traffic study prepared for the project.

Table 6 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - Land Use Inventory Sectors	
Land Use Sectors Greenhouse Gas Emissions Target	295,530,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO ₂ e)/SP ¹	4.6
Notes: AB = Assembly Bill; CO ₂ e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.	
¹ Greenhouse gas efficiency levels were calculated using only the “land use-related” sectors of ARB’s emissions inventory.	
Please refer to Appendix D for detailed calculations.	
Sources: Data compiled by EDAW 2009, ARB 2009a, DOF 2009, EDD 2009, ICF Jones & Stokes 2009.	

Staff proposes a project-level efficiency threshold of 4.6 MT CO₂e/SP, the derivation of which is shown Table 6. This efficiency-based threshold reflects very GHG-efficient projects. As stated previously and below, staff anticipates that significance thresholds (rebuttable presumptions of significance at the project level) will function on an interim basis only until adequate programmatic approaches are in place at the city, county, and regional level that will allow the CEQA streamlining of individual projects. (See State CEQA Guidelines §15183.5 [“Tiering and Streamlining the Analysis of Greenhouse Gas Emissions”]).

2.3.3 PLAN-LEVEL GHG THRESHOLDS

Staff proposes using a two step process for determining the significance of proposed plans and plan amendments for GHG. As a first step in assessing plan-level impacts, Staff

is proposing that agencies that have adopted a qualified Greenhouse Gas Reduction Strategy (or have incorporated similar criteria in their general plan) and the general plan is consistent with the Greenhouse Gas Reduction Strategy, the general plan would be considered less than significant. In addition, as discussed above for project-level GHG impacts, Staff is proposing an efficiency threshold to assess plan-level impacts. Staff believes a programmatic approach to limiting GHG emissions is appropriate at the plan-level. Thus, as projects consistent with the Greenhouse Gas Reduction Strategy are proposed, they may be able to tier off the plan and its environmental analysis.

2.3.3.1 GHG EFFICIENCY METRICS FOR PLANS

For local land use plans, a GHG-efficiency metric (e.g., GHG emissions per unit) would enable comparison of a proposed general plan to its alternatives and to determine if the proposed general plan meets AB 32 emission reduction goals.

AB 32 identifies local governments as essential partners in achieving California's goal to reduce GHG emissions. Local governments have primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth and the changing needs of their jurisdiction. ARB has developed the Local Government Operations Protocol and is developing a protocol to estimate community-wide GHG emissions. ARB encourages local governments to use these protocols to track progress in reducing GHG emissions. ARB encourages local governments to institutionalize the community's strategy for reducing its carbon footprint in its general plan. SB 375 creates a process for regional integration of land development patterns and transportation infrastructure planning with the primary goal of reducing GHG emissions from the largest sector of the GHG emission inventory, light duty vehicles.

If the statewide AB 32 GHG emissions reduction context is established, GHG efficiency can be viewed independently from the jurisdiction in which the plan is located. Expressing projected 2020 mass of emissions from land use-related emissions sectors by comparison to a demographic unit (e.g., population and employment) provides evaluation of the GHG efficiency of a project in terms of what emissions are allowable while meeting AB 32 targets.

Two approaches were considered for efficiency metrics. The "service population" (SP) approach would consider efficiency in terms of the GHG emissions compared to the sum of the number of jobs and the number of residents at a point in time. The per capita option would consider efficiency in terms of GHG emissions per resident only. Staff recommends that the efficiency threshold for plans be based on all emission inventory sectors because, unlike land use projects, general plans comprise more than just land use related emissions (e.g. industrial). Further, Staff recommends that the plan threshold be based on the service population metric as general plans include a mix of residents and employees. The Service Population metric would allow decision makers to compare GHG efficiency of general plan alternatives that vary residential and non-residential development totals, encouraging GHG efficiency through improving jobs/housing balance. This approach would not give preference to communities that accommodate more residential (population-driven) land

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uses than non-residential (employment driven) land uses which could occur with the per capita approach.

A SP-based GHG efficiency metric (see Table 7) was derived from the emission rates at the State level that would accommodate projected population and employment growth under trend forecast conditions, and the emission rates needed to accommodate growth while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020).

Table 7 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - All Inventory Sectors	
All Inventory Sectors Greenhouse Gas Emissions Target	426,500,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO ₂ e)/SP ¹	6.6
Notes: AB = Assembly Bill; CO ₂ e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population.	
¹ Greenhouse gas efficiency levels were calculated using only the “land use-related” sectors of ARB’s emissions inventory.	
Please refer to Appendix D for detailed calculations.	
Sources: Data compiled by EDAW 2009, ARB 2009a, DOF 2009, EDD 2009, ICF Jones & Stokes 2009.	

If a general plan demonstrates, through dividing the emissions inventory projections (MT CO₂e) by the amount of growth that would be accommodated in 2020, that it could meet the GHG efficiency metrics proposed in this section (6.6 MT CO₂e/SP from all emission sectors, as noted in Table 7), then the amount of GHG emissions associated with the general plan would be considered less than significant, regardless of its size (and magnitude of GHG emissions). In other words, the general plan would accommodate growth in a manner that would not hinder the State’s ability to achieve AB 32 goals, and thus, would be less than significant for GHG emissions and their contribution to climate change. The efficiency metric would not penalize well-planned communities that propose a large amount of development. Instead, the SP-based GHG efficiency metric acts to encourage the types of development that BAAQMD and OPR support (i.e., infill and transit-oriented development) because it tends to reduce GHG and other air pollutant emissions overall, rather than discourage large developments for being accompanied by a large mass of GHG emissions. Plans that are more GHG efficient would have no or limited mitigation requirements to help them complete the CEQA process more readily than plans that promote GHG inefficiencies, which will require detailed design of mitigation during the CEQA process and could subject a plan to potential challenge as to whether all feasible mitigation was identified and adopted. This type of threshold can shed light on a well-planned general plan that accommodates a large amount of growth in a GHG-efficient way.

When analyzing long-range plans, such as general plans, it is important to note that the planning horizon will often surpass the 2020 timeframe for implementation of AB 32. Executive Order S-3-05 establishes a more aggressive emissions reduction goal for the year 2050 of 80 percent below 1990 emissions levels. The year 2020 should be viewed as a milestone year, and the general plan should not preclude the community from a trajectory toward the 2050 goal. However, the 2020 timeframe is examined in this threshold evaluation because doing so for the 2050 timeframe (with respect to population, employment, and GHG emissions projections) would be too speculative. Advances in technology and policy decisions at the state level will be needed to meet the aggressive 2050 goals. It is beyond the scope of the analysis tools available at this time to examine reasonable emissions reductions that can be achieved through CEQA analysis in the year 2050. As the 2020 timeframe draws nearer, BAAQMD will need to reevaluate the threshold to better represent progress toward 2050 goals.

2.3.4 GREENHOUSE GAS REDUCTION STRATEGIES

Finally, many local agencies have already undergone or plan to undergo efforts to create general or other plans that are consistent with AB 32 goals. The Air District encourages such planning efforts and recognizes that careful upfront planning by local agencies is invaluable to achieving the state's GHG reduction goals. If a project is consistent with an adopted Qualified Greenhouse Gas Reduction Strategy that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emission impacts. This approach is consistent with CEQA Guidelines Sections 15064(h)(3) and 15183.5(b), which provides that a "lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem."

A qualified Greenhouse Gas Reduction Strategy (or similar adopted policies, ordinances and programs) is one that is consistent with all of the AB 32 Scoping Plan measures and goals. The Greenhouse Gas Reduction Strategy should identify a land use design, transportation network, goals, policies and implementation measures that would achieve AB 32 goals. Strategies with horizon years beyond 2020 should consider continuing the downward reduction path set by AB 32 and move toward climate stabilization goals established in Executive Order S-3-05.

Qualified Greenhouse Gas Reduction Strategy

A qualified Greenhouse Gas Reduction Strategy adopted by a local jurisdiction should include the following elements as described in the State CEQA Guidelines Section 15183.5. The District's revised CEQA Guidelines provides the methodology to determine if a Greenhouse Gas Reduction Strategy meets these requirements.

- (A) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

- (B) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;
- (C) Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- (D) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- (E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;
- (F) Be adopted in a public process following environmental review.

Local Climate Action Policies, Ordinances and Programs

Air District staff recognizes that many communities in the Bay Area have been proactive in planning for climate change but have not yet developed a stand-alone Greenhouse Gas Reduction Strategy that meets the above criteria. Many cities and counties have adopted climate action policies, ordinances and program that may in fact achieve the goals of AB 32 and a qualified Greenhouse Gas Reduction Strategy. Staff recommends that if a local jurisdiction can demonstrate that its collective set of climate action policies, ordinances and other programs is consistent with AB 32 and State CEQA Guidelines Section 15183.5, includes requirements or feasible measures to reduce GHG emissions and achieves one of the following GHG emission reduction goals,³ the AB 32 consistency demonstration should be considered equivalent to a qualified Greenhouse Gas Reduction Strategy:

- ▶ 1990 GHG emission levels,
- ▶ 15 percent below 2008 emission levels, or

Qualified Greenhouse Gas Reduction Strategies that are tied to the AB 32 reduction goals would promote reductions on a plan level without impeding the implementation of GHG-efficient development, and would recognize the initiative of many Bay Area communities who have already developed or are in the process of developing a GHG reduction plan. The details required above for a qualified Greenhouse Gas Reduction Strategy (or similar adopted policies, ordinances and programs) would provide the evidentiary basis for making CEQA findings that development consistent with the plan would result in feasible, measureable, and verifiable GHG reductions consistent with broad state goals

³ Lead agencies using consistency with their jurisdiction's climate action policies, ordinances and programs as a measure of significance under CEQA Guidelines section 15064(h)(3) and 15183.5(b) should ensure that the policies, ordinances and programs satisfy all of the requirements of that subsection before relying on them in a CEQA analysis.

such that projects approved under qualified Greenhouse Gas Reduction Strategies or equivalent demonstrations would achieve their fair share of GHG emission reductions.

2.3.4.1 GHG THRESHOLDS FOR REGIONAL PLANS

Regional plans include the Regional Transportation Plan prepared by the Metropolitan Transportation Commission (MTC) and air quality plans prepared by the Air District.

The Regional Transportation Plan (RTP), also called a Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan is the mechanism used in California by both Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct long-range (minimum of 20 years) planning in their regions. MTC functions as both the regional transportation planning agency, a state designation, and, for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of the Bay Area's transportation system that includes mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. The performance of this system affects such public policy concerns as air quality, environmental resource consumption, social equity, "smart growth," economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process requires developing strategies for operating, managing, maintaining, and financing the area's transportation system in such a way as to advance the area's long-term goals.

The Air District periodically prepares and updates plans to achieve the goal of healthy air. Typically, a plan will analyze emissions inventories (estimates of current and future emissions from industry, motor vehicles, and other sources) and combine that information with air monitoring data (used to assess progress in improving air quality) and computer modeling simulations to test future strategies to reduce emissions in order to achieve air quality standards. Air quality plans usually include measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Bay Area air quality plans are prepared with the cooperation of MTC, the Association of Bay Area Governments (ABAG) and the Bay Conservation and Development Commission (BCDC).

The proposed threshold of significance for regional plans is no net increase in emissions including greenhouse gas emissions. This threshold serves to answer the State CEQA Guidelines Appendix G sample question: "Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?"

2.3.5 STATIONARY SOURCE GHG THRESHOLD

Staff's recommended threshold for stationary source GHG emissions is based on estimating the GHG emissions from combustion sources for all permit applications submitted to the Air District in 2005, 2006 and 2007. The analysis is based only on CO₂

emissions from stationary sources, as that would cover the vast majority of the GHG emissions due to stationary combustion sources in the SFBAAB. The estimated CO₂ emissions were calculated for the maximum permitted amount, i.e. emissions that would be emitted if the sources applying for a permit application operate at maximum permitted load and for the total permitted hours. All fuel types are included in the estimates. For boilers burning natural gas, diesel fuel is excluded since it is backup fuel and is used only if natural gas is not available. Emission values are estimated before any offsets (i.e., Emission Reduction Credits) are applied. GHG emissions from mobile sources, electricity use and water delivery associated with the operation of the permitted sources are not included in the estimates.

It is projected that a threshold level of 10,000 metric tons of CO₂e per year would capture approximately 95 percent of all GHG emissions from new permit applications from stationary sources in the SFBAAB. That threshold level was calculated as an average of the combined CO₂ emissions from all stationary source permit applications submitted to the Air District during the three year analysis period.

Staff recommends this 10,000 MT of CO₂/yr as it would address a broad range of combustion sources and thus provide for a greater amount of GHG reductions to be captured and mitigated through the CEQA process. As documented in the Scoping Plan, in order to achieve statewide reduction targets, emissions reductions need to be obtained through a broad range of sources throughout the California economy and this threshold would achieve this purpose. While this threshold would capture 95 percent of the GHG emissions from new permit applications, the threshold would do so by capturing only the large, significant projects. Permit applications with emissions above the 10,000 MT of CO₂/yr threshold account for less than 10 percent of stationary source permit applications which represent 95 percent of GHG emissions from new permits analyzed during the three year analysis period.

This threshold would be considered an interim threshold and Air District staff will reevaluate the threshold as AB 32 Scoping Plan measures such as cap and trade are more fully developed and implemented at the state level.

2.3.6 SUMMARY OF JUSTIFICATION FOR GHG THRESHOLDS

The bright-line numeric threshold of 1,100 MT CO₂e/yr is a numeric emissions level below which a project's contribution to global climate change would be less than "cumulatively considerable." This emissions rate is equivalent to a project size of approximately 60 single-family dwelling units, and approximately 59 percent of all future projects and 92 percent of all emissions from future projects would exceed this level. For projects that are above this bright-line cutoff level, emissions from these projects would still be less than cumulatively significant if the project as a whole would result in an efficiency of 4.6 MT CO₂e per service population or better for mixed-use projects. Projects with emissions above 1,100 MT CO₂e/yr would therefore still be less than significant if they achieved project efficiencies below these levels. If projects as proposed exceed these levels, they would be required to implement mitigation measures to bring

them back below the 1,100 MT CO₂e/yr bright-line cutoff or within the 4.6 MT CO₂e Service Population efficiency threshold. If mitigation did not bring a project back within the threshold requirements, the project would be cumulatively significant and could be approved only with a Statement of Overriding Considerations and a showing that all feasible mitigation measures have been implemented. Projects' GHG emissions would also be less than significant if they comply with a Qualified Greenhouse Gas Reduction Strategy.

As explained in the preceding analyses of these thresholds, the greenhouse gas emissions from land use projects expected between now and 2020 built in compliance with these thresholds would be approximately 26 percent below BAU 2020 conditions and thus would be consistent with achieving an AB 32 equivalent reduction. The 26 percent reduction from BAU 2020 from new projects built in conformance with these proposed thresholds would achieve an aggregate reduction of approximately 1.6 MMT CO₂e/yr, which is the level of emission reductions from new Bay Area land use sources needed to meet the AB 32 goals, per ARB's Scoping Plan as discussed above.

Projects with greenhouse gas emissions in conformance with these proposed thresholds would therefore not be considered significant for purposes of CEQA. Although the emissions from such projects would add an incremental amount to the overall greenhouse gas emissions that cause global climate change impacts, emissions from projects consistent with these thresholds would not be a "cumulatively considerable" contribution under CEQA. Such projects would not be "cumulatively considerable" because they would be helping to solve the cumulative problem as a part of the AB 32 process.

California's response to the problem of global climate change is to reduce greenhouse gas emissions to 1990 levels by 2020 under AB 32 as a near-term measure and ultimately to 80 percent below 1990 levels by 2050 as the long-term solution to stabilizing greenhouse gas concentrations in the atmosphere at a level that will not cause unacceptable climate change impacts. To implement this solution, the Air Resources Board has adopted a Scoping Plan and budgeted emissions reductions that will be needed from all sectors of society in order to reach the interim 2020 target.

The land-use sector in the Bay Area needs to achieve aggregate emission reductions of approximately 1.6 MMT CO₂e/yr from new projects between now and 2020 to achieve this goal, as noted above, and each individual new project will need to achieve its own respective portion of this amount in order for the Bay Area land use sector as a whole to achieve its allocated emissions target. Building all of the new projects expected in the Bay Area between now and 2020 in accordance with the thresholds that District staff are proposing will achieve the overall appropriate share for the land use sector, and building each individual project in accordance with the proposed thresholds will achieve that individual project's respective portion of the emission reductions needed to implement the AB 32 solution. For these reasons, projects built in conformance with the proposed thresholds will be part of the solution to the cumulative problem, and not part of the continuing problem. They will allow the Bay Area's land use sector to achieve the emission reductions necessary from that sector for California to implement its solution to the cumulative problem of global climate change. As such, even though such projects

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will add an incremental amount of greenhouse gas emissions, their incremental contribution will be less than “cumulatively considerable” because they are helping to achieve the cumulative solution, not hindering it. Such projects will therefore not be “significant” for purposes of CEQA. (*See* CEQA Guidelines §15064(h)(1).)

The conclusion that land use projects that comply with these proposed thresholds is also supported by CEQA Guidelines Section 15030(a)(3), which provides that a project’s contribution to a cumulative problem can be less than cumulatively considerable “if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.” In the case of greenhouse gas emissions associated with land use projects, achieving the amount of emission reductions below BAU that will be required to achieve the AB 32 goals is the project’s “fair share” of the overall emission reductions needed under ARB’s scoping plan to reach the overall statewide AB 32 emissions levels for 2020. If a project is designed to implement greenhouse gas mitigation measures that achieve a level of reductions consistent with what is required from all new land use projects to achieve the land use sector “budget” – *i.e.*, keeping overall project emissions below 1,100 MT CO₂e/yr or ensuring that project efficiency is better than 4.6 MT CO₂e/service population – then it will be implementing its share of the mitigation measures necessary to alleviate the cumulative impact, as shown in the analyses set forth above.

It is also worth noting that this “fair share” approach is flexible and will allow a project’s significance to be determined by how well it is designed from a greenhouse gas efficiency standpoint, and not just by the project’s size. For example, a large high-density infill project located in an urban core nearby to public transit and other alternative transportation options, and built using state-of-the-art energy efficiency methods and improvements such as solar panels, as well as all other feasible mitigation measures, would not become significant for greenhouse gas purposes (and thus require a Statement of Overriding Considerations in order to be approved) simply because it happened to be a large project. Projects such as this hypothetical development with low greenhouse gas emissions per service population are what California will need in the future in order to do its part in achieving a solution to the problem of global climate change. The determination of significance under CEQA should therefore take these factors into account, and staff’s proposed significance thresholds would achieve this important policy goal. In all, land use sector projects that comply with the GHG thresholds would not be “cumulatively considerable” because they would be helping to solve the cumulative problem as a part of the AB 32 process.

Likewise, new Air District permit applications for stationary sources that comply with the quantitative threshold of 10,000 MT CO₂e/yr would not be “cumulatively considerable” because they also would not hinder the state’s ability to solve the cumulative greenhouse gas emissions problem pursuant to AB 32. Unlike the land use sector, the AB 32 Scoping Plan measures, including the cap-and-trade program, provide for necessary emissions reductions from the stationary source sector to achieve AB 32 2020 goals.

While stationary source projects will need to comply with the cap-and-trade program once it is enacted and reduce their emissions accordingly, the program will be phased in over time starting in 2012 and at first will only apply to the very largest sources of GHG emissions. In the mean time, certain stationary source projects, particularly those with large GHG emissions, still will have a cumulatively considerable impact on climate change. The 10,000 MT CO₂e/yr threshold will capture 95 percent of the stationary source sector GHG emissions in the Bay Area. The five percent of emissions that are from stationary source projects below the 10,000 MT CO₂e/yr threshold account for a small portion of the Bay Area's total GHG emissions from stationary sources and these emissions come from very small projects. Such small stationary source projects will not significantly add to the global problem of climate change, and they will not hinder the Bay Area's ability to reach the AB 32 goal in any significant way, even when considered cumulatively. In Air District's staff's judgment, the potential environmental benefits from requiring EIRs and mitigation for these projects would be insignificant. In all, based on staff's expertise, stationary source projects with emissions below 10,000 MT CO₂e/yr will not provide a cumulatively considerable contribution to the cumulative impact of climate change.

3 COMMUNITY RISK AND HAZARD THRESHOLDS

To address community risk from air toxics, the Air District initiated the Community Air Risk Evaluation (CARE) program in 2004 to identify locations with high levels of risk from ambient toxic air contaminants (TAC) co-located with sensitive populations and use the information to help focus mitigation measures. Through the CARE program, the Air District developed an inventory of TAC emissions for 2005 and compiled demographic and health indicator data. According to the findings of the CARE Program, diesel PM—mostly from on and off-road mobile sources—accounts for over 80 percent of the inhalation cancer risk from TACs in the Bay Area (BAAQMD 2006).

The Air District applied a regional air quality model using the 2005 emission inventory data to estimate excess cancer risk from ambient concentrations of important TAC species, including diesel PM, 1,3-butadiene, benzene, formaldehyde and acetaldehyde. The highest cancer risk levels from ambient TAC in the Bay Area tend to occur in the core urban areas, along major roadways and adjacent to freeways and port activity. Cancer risks in areas along these major freeways are estimated to range from 200 to over 500 excess cases in a million for a lifetime of exposure. Priority communities within the Bay Area – defined as having higher emitting sources, highest air concentrations, and nearby low income and sensitive populations – include the urban core areas of Concord, eastern San Francisco, western Alameda County, Redwood City/East Palo Alto, Richmond/San Pablo, and San Jose.

Fifty percent of BAAQMD's population was estimated to have an ambient background inhalation cancer risk of less than 500 cases in one million, based on emission levels in 2005. Table 8 presents a summary of percentages of the population exposed to varying levels of cancer risk from ambient TACs. Approximately two percent of the SFBAAB

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population is exposed to background risk levels of less than 200 excess cases in one million. This is in contrast to the upper percentile ranges where eight percent of the SFBAAB population is exposed to background risk levels of greater than 1,000 excess cases per one million. To identify and reduce risks from TAC, this chapter presents thresholds of significance for both cancer risk and non-cancer health hazards.

Percentage of Population (Percent below level of ambient risk)	Ambient Cancer Risk (inhalation cancer cases in one million)
92	1,000
90	900
83	800
77	700
63	600
50	500
32	400
13	300
2	200
<1	100

Source: Data compiled by EDAW 2009.

Many scientific studies have linked fine particulate matter and traffic-related air pollution to respiratory illness (Hiltermann et al. 1997, Schikowski et al 2005, Vineis et al. 2007) and premature mortality (Dockery 1993, Pope et al. 1995, Jerrett et al. 2005). Traffic-related air pollution is a complex mix of chemical compounds (Schauer et al. 2006), often spatially correlated with other stressors, such as noise and poverty (Wheeler and Ben-Shlomo 2005). While such correlations can be difficult to disentangle, strong evidence for adverse health effects of fine particulate matter (PM_{2.5}) has been developed for regulatory applications in a study by the U.S. EPA. This study found that a 10 percent increase in PM_{2.5} concentrations increased the non-injury death rate by 10 percent (U.S. EPA 2006).

Public Health Officers for four counties in the San Francisco Bay Area in 2009 provided testimony to the Air District’s Advisory Council (February 11, 2009, Advisory Council Meeting on Air Quality and Public Health). Among the recommendations made, was that PM_{2.5}, in addition to TACs, be considered in assessments of community-scale impacts of air pollution. In consideration of the scientific studies and recommendations by the Bay Area Health Directors, it is apparent that, in addition to the significance thresholds for local-scale TAC, thresholds of significance are required for near-source, local-scale concentrations of PM_{2.5}.

3.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Proposed thresholds of significance and Board-requested options are presented in this section:

- The **Staff Proposal** includes thresholds for cancer risk, non-cancer health hazards, and fine particulate matter.
- **Tiered Thresholds Option** includes tiered thresholds for new sources in impacted communities. Thresholds for receptors and cumulative impacts are the same as the Staff Proposal.

Proposal/Option	Construction-Related	Operational-Related
Project-Level – Individual Project		
<p>Risks and Hazards – New Source (All Areas) (Individual Project)</p> <p style="text-align: center;"><u>Staff Proposal</u></p>	<p>Same as Operational Thresholds*</p>	<p style="text-align: center;">Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM_{2.5} increase: > 0.3 µg/m³ annual average</p> <p><u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor</p>
<p>Risks and Hazards – New Receptor (All Areas) (Individual Project)</p> <p style="text-align: center;"><u>Staff Proposal</u></p>	<p>Same as Operational Thresholds*</p>	<p style="text-align: center;">Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM_{2.5} increase: > 0.3 µg/m³ annual average</p> <p><u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor</p>

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Proposal/Option	Construction-Related	Operational-Related
Risks and Hazards (Individual Project) <u>Tiered Thresholds Option</u>	Same as Operational Thresholds*	<u>Impacted Communities: Siting a New Source</u> Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >5.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM _{2.5} increase: > 0.2 µg/m ³ annual average <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor
	Same as Operational Thresholds*	<u>Impacted Communities: Siting a New Receptor</u> <u>All Other Areas: Siting a New Source or Receptor</u> Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM _{2.5} increase: > 0.3 µg/m ³ annual average <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant
Project-Level – Cumulative		
Risks and Hazards – New Source (All Areas) (Cumulative Thresholds)	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) PM _{2.5} : > 0.8 µg/m ³ annual average (from all local sources) <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor

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Proposal/Option	Construction-Related	Operational-Related
Risks and Hazards – New Receptor (All Areas) (Cumulative Thresholds)	Same as Operational Thresholds*	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) <u>PM_{2.5}</u> : > 0.8 µg/m ³ annual average (from all local sources) <u>Zone of Influence</u> : 1,000-foot radius from fence line of source or receptor
Plan-Level		
Risks and Hazards	None	1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas). 2. Overlay zones of at least 500 feet (or Air District-approved modeled distance) from all freeways and high volume roadways.
Accidental Release of Acutely Hazardous Air Pollutants	None	None
Regional Plans (Transportation and Air Quality Plans)		
Risks and Hazards	None	No net increase in toxic air contaminants

* Note: The Air District recommends that for construction projects that are less than one year duration, Lead Agencies should annualize impacts over the scope of actual days that peak impacts are to occur, rather than the full year.

3.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

The goal of the proposed thresholds is to ensure that no source creates, or receptor endures, a significant adverse impact from any individual project, and that the total of all nearby directly emitted risk and hazard emissions is also not significantly adverse. The thresholds for local risks and hazards from TAC and PM_{2.5} are intended to apply to all sources of emissions, including both permitted stationary sources and on- and off-road mobile sources, such as sources related to construction, busy roadways, or freight movement.

Thresholds for an individual new source are designed to ensure that the source does not contribute to a cumulatively significant impact. Cumulative thresholds for sources recognize that some areas are already near or at levels of significant impact. If within such an area there are receptors, or it can reasonably be foreseen that there will be

receptors, then a cumulative significance threshold sets a level beyond which any additional risk is significant.

For new receptors – sensitive populations or the general public – thresholds of significance are designed to identify levels of contributed risk or hazards from existing local sources that pose a significant risk to the receptors. Single-source thresholds for receptors are provided to recognize that within the area defined there can be variations in risk levels that may be significant. Single-source thresholds assist in the identification of significant risks, hazards, or concentrations in a subarea, within the area defined by the selected radius. Cumulative thresholds for receptors are designed to account for the effects of all sources within the defined area.

Cumulative thresholds, for both sources and receptors, must consider the size of the source area, defined by a radius from the proposed project. To determine cumulative impacts from a prescribed zone of influence requires the use of modeling. The larger the radius, the greater the number of sources considered that may contribute to the modeled risk and, until the radius approaches a regional length scale, the greater the expected modeled risk increment. If the area of impact considered were grown to the scale of a city, the modeled risk increment would approach the risk level present in the ambient air.

3.3.1 SCIENTIFIC AND REGULATORY JUSTIFICATION

Regulatory Framework for TACs

Prior to 1990, the Clean Air Act required EPA to list air toxics it deemed hazardous and to establish control standards which would restrict concentrations of hazardous air pollutants (HAP) to a level that would prevent any adverse effects “with an ample margin of safety.” By 1990, EPA had regulated only seven such pollutants and it was widely acknowledged by that time that the original Clean Air Act had failed to address toxic air emissions in any meaningful way. As a result, Congress changed the focus of regulation in 1990 from a risk-based approach to technology-based standards. Title III, Section 112(b) of the 1990 Clean Air Act Amendment established this new regulatory approach. Under this framework, prescribed pollution control technologies based upon maximum achievable control technology (MACT) were installed without the a priori estimation of the health or environmental risk associated with each individual source. The law listed 188 HAPs that would be subject to the MACT standards. EPA issued 53 standards for 89 different types of major industrial sources of air toxics and eight categories of smaller sources such as dry cleaners. These requirements took effect between 1996 and 2002. Under the federal Title V Air Operating Permit Program, a facility with the potential to emit 10 tons of any toxic air pollutant, or 25 tons per year of any combination of toxic air pollutants, is defined as a major source HAPs. Title V permits include requirements for these facilities to limit toxic air pollutant emissions.

Several state and local agencies adopted programs to address gaps in EPA’s program prior to the overhaul of the national program in 1990. California’s program to reduce exposure to air toxics was established in 1983 by the Toxic Air Contaminant Identification and Control Act (AB 1807, Tanner 1983) and the Air Toxics "Hot Spots"

Information and Assessment Act (AB 2588, Connelly 1987). Under AB 1807, ARB and the Office of Environmental Health Hazard Assessment (OEHHA) determines if a substance should be formally identified as a toxic air contaminant (TAC) in California. OEHHA also establishes associated risk factors and safe concentrations of exposure.

AB 1807 was amended in 1993 by AB 2728, which required ARB to identify the 189 federal hazardous air pollutants as TACs. AB 2588 (Connelly, 1987) supplements the AB 1807 program, by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. In September 1992, the "Hot Spots" Act was amended by Senate Bill 1731 which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Cancer Risk

Cancer risk from TACs is typically expressed in numbers of excess cancer cases per million persons exposed over a defined period of exposure, for example, over an assumed 70 year lifetime. The Air District is not aware of any agency that has established an acceptable level of cancer risk for TACs. However, a range of what constitutes a significant increment of cancer risk from any compound has been established by the U.S. EPA. EPA's guidance for conducting air toxics analyses and making risk management decisions at the facility- and community-scale level considers a range of acceptable cancer risks from one in a million to one in ten thousand (100 in a million). The guidance considers an acceptable range of cancer risk increments to be from one in a million to one in ten thousand. In protecting public health with an ample margin of safety, EPA strives to provide maximum feasible protection against risks to health from HAPs by limiting additional risk to a level no higher than the one in ten thousand estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years. This goal is described in the preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking (54 Federal Register 38044, September 14, 1989) and is incorporated by Congress for EPA's residual risk program under Clean Air Act section 112(f).

Regulation 2, Rule 5 of the Air District specifies permit requirements for new and modified stationary sources of TAC. The Project Risk Requirement (2-5-302.1) states that the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project cancer risk exceeds 10.0 in one million.

Hazard Index for Non-cancer Health Effects

Non-cancer health hazards for chronic and acute diseases are expressed in terms of a hazard index (HI), a ratio of TAC concentration to a reference exposure level (REL), below which no adverse health effects are expected, even for sensitive individuals. As such, OEHHA has defined acceptable concentration levels, and also significant concentration increments, for compounds that pose non-cancer health hazards. If the HI for a compound is less than one, non-cancer chronic and acute health impacts have been determined to be less than significant.

State and Federal Ambient Air Quality Standards for PM_{2.5}

The Children's Environmental Health Protection Act (Senate Bill 25), passed by the California state legislature in 1999, requires ARB, in consultation with OEHHA, to "review all existing health-based ambient air quality standards to determine whether, based on public health, scientific literature and exposure pattern data, these standards adequately protect the public, including infants and children, with an adequate margin of safety." As a result of the review requirement, in 2002 ARB adopted an annual average California Ambient Air Quality Standard (CAAQS) for PM_{2.5} of 12 ug/m³ that is not to be exceeded (California Code of Regulations, Title 17 § 70200, Table of Standards.) The National Ambient Air Quality Standard (NAAQS) established an annual standard for PM_{2.5} (15 ug/m³) that is less stringent than the CAAQS, but also set a 24-hour average standard (35 ug/m³), which is not included in the CAAQS (Code of Federal Regulations, Title 40, Part 50.7).

Significant Impact Levels for PM_{2.5}

EPA recently proposed and documented alternative options for PM_{2.5} Significant Impact Levels (SILs) (Federal Register 40 CFR Parts 51 and 52, September 21, 2007). The EPA is proposing to facilitate implementation of a PM_{2.5} Prevention of Significant Deterioration (PSD) program in areas attaining the PM_{2.5} NAAQS by developing PM_{2.5} increments, or SILs. These "increments" are maximum increases in ambient PM_{2.5} concentrations (PM_{2.5} increments) allowed in an area above the baseline concentration.

The SIL is a threshold that would be applied to individual facilities that apply for a permit to emit a regulated pollutant in an area that meets the NAAQS. The State and EPA must determine if emissions from that facility will cause the air quality to worsen. If an individual facility projects an increase in emissions that result in ambient impacts greater than the established SIL, the permit applicant would be required to perform additional analyses to determine if those impacts will be more than the amount of the PSD increment. This analysis would combine the impact of the proposed facility when added to all other sources in the area.

The EPA is proposing such values for PM_{2.5} that will be used as screening tools by a major source subject to PSD to determine the subsequent level of analysis and data gathering required for a PSD permit application for emissions of PM_{2.5}. The SIL is one element of the EPA program to prevent deterioration in regional air quality and is utilized in the new source review (NSR) process. New source review is required under Section 165 of the Clean Air Act, whereby a permit applicant must demonstrate that emissions from the proposed construction and operation of a facility "will not cause, or contribute to, air pollution in excess of any maximum allowable increase or maximum allowable concentration for any pollutant." The purpose of the SIL is to provide a screening level that triggers further analysis in the permit application process.

For the purpose of NSR, SILs are set for three types of areas: Class I areas where especially clean air is most desirable, including national parks and wilderness areas; Class II areas where there is not expected to be substantial industrial growth; and Class III areas where the highest relative level of industrial development is expected. In Class II

and Class III areas, a PM_{2.5} concentration of 0.3, 0.8, and 1 µg/m³ has been proposed as a SIL. To arrive at the SIL PM_{2.5} option of 0.8 µg/m³, EPA scaled an established PM₁₀ SILs of 1.0 µg/m³ by the ratio of emissions of PM_{2.5} to PM₁₀ using the EPA's 1999 National Emissions Inventory. To arrive at the SIL option of 0.3 µg/m³, EPA scaled the PM₁₀ SIL of 1.0 µg/m³ by the ratio of the current Federal ambient air quality standards for PM_{2.5} and PM₁₀ (15/50). These options represent what EPA currently considers as a range of appropriate SIL values.

EPA interprets the SIL to be the level of PM_{2.5} increment that represents a "significant contribution" to regional non-attainment. While SIL options were not designed to be thresholds for assessing community risk and hazards, they are being considered to protect public health at a regional level by helping an area maintain the NAAQS. Furthermore, since it is the goal of the Air District to achieve and maintain the NAAQS and CAAQS at both regional and local scales, the SILs may be reasonably be considered as thresholds of significance under CEQA for local-scale increments of PM_{2.5}.

Roadway Proximity Health Studies

Several medical research studies have linked near-road pollution exposure to a variety of adverse health outcomes impacting children and adults. Kleinman et al. (2007) studied the potential of roadway particles to aggravate allergic and immune responses in mice. Using mice that were not inherently susceptible, the researchers placed these mice at various distances downwind of State Road 60 and Interstate 5 freeways in Los Angeles to test the effect these roadway particles have on their immune system. They found that within five meters of the roadway, there was a significant allergic response and elevated production of specific antibodies. At 150 meters (492 feet) and 500 meters (1,640 feet) downwind of the roadway, these effects were not statistically significant.

Another significant study (Ven Hee et al. 2009) conducted a survey involving 3,827 participants that aimed to determine the effect of residential traffic exposure on two preclinical indicators of heart failure; left ventricular mass index (LVMI), measured by the cardiac magnetic resonance imaging (MRI), and ejection fraction. The studies classified participants based on the distance between their residence and the nearest interstate highway, state or local highway, or major arterial road. Four distance groups were defined: less than 50 meters (165 feet), 50-100 meters, 101-150 meters, and greater than 150 meters. After adjusting for demographics, behavioral, and clinical covariates, the study found that living within 50 meters of a major roadway was associated with a 1.4 g/m² higher LVMI than living more than 150 meters from one. This suggests an association between traffic-related air pollution and increased prevalence of a preclinical predictor of heart failure among people living near roadways.

To quantify the roadway concentrations of PM_{2.5} that contributed to the health impacts reported by Kleinman et al (2007), the Air District modeled the emissions and associated particulate matter concentrations for the roadways studied. To perform the modeling, emissions were estimated for Los Angeles using the EMFAC model and annual average vehicle traffic data taken from Caltrans was used in the roadway model (CAL3QHCR) to estimate the downwind PM_{2.5} concentrations at 50 meters and 150 meters. Additionally,

emissions were assumed to occur from 10:00 a.m. to 2:00 p.m. corresponding to the time in which the mice were exposed during the study. The results of the modeling indicate that at 150 meters, where no significant health effects were found, the downwind concentration of PM_{2.5} was 0.78 µg/m³, consistent with the proposed EPA SIL option of 0.8 µg/m³.

Concentration-Response Function for PM_{2.5}

The U.S. EPA reevaluated the relative risk of premature death associated with PM_{2.5} exposure and developed a new relative risk factor (U.S. EPA 2006). This expert elicitation was prepared in support of the characterization of uncertainty in EPA's benefits analyses associated with reductions in exposure to particulate matter pollution. As recommended by the National Academy of Sciences, EPA used expert judgment to better describe the uncertainties inherent in their benefits analysis. Twelve experts participated in the study and provided not just a point estimate of the health effects of PM_{2.5}, but a probability distribution representing the range where they expected the true effect would be. Among the experts who directly incorporated their views on the likelihood of a causal relationship into their distributions, the central (median) estimates of the percent change in all-cause mortality in the adult U.S. population that would result from a permanent 1 µg/m³ drop in annual average PM_{2.5} concentrations ranged from 0.7 to 1.6 percent. The median of their estimates was 1.0 (% increase per 1 µg/m³ increase in PM_{2.5}), with a 90% confidence interval of 0.3 to 2.0 (medians of their 5th and 95th percentiles, respectively) (BAAQMD 2010). Subsequent to the EPA elicitation, Schwartz et al. (2008) examined the linearity of the concentration-response function of PM_{2.5}-mortality and showed that the response function was linear, with health effects clearly continuing below the current U.S. standard of 15 µg/m³, and that the effects of changes in exposure on mortality were seen within two years.

San Francisco Ordinance on Roadway Proximity Health Effects

In 2008, the City and County of San Francisco adopted an ordinance (San Francisco Health Code, Article 38 - Air Quality Assessment and Ventilation Requirement for Urban Infill Residential Development, Ord. 281-08, File No. 080934, December 5, 2008) requiring that public agencies in San Francisco take regulatory action to prevent future air quality health impacts from new sensitive uses proposed near busy roadways (SFDPH 2008). The regulation requires that developers screen sensitive use projects for proximity to traffic and calculate the concentration of PM_{2.5} from traffic sources where traffic volumes suggest a potential hazard. If modeled levels of traffic-attributable PM_{2.5} at a project site exceed an action level (currently set at 0.2 µg/m³) developers would be required to incorporate ventilation systems to remove 80 percent of PM_{2.5} from outdoor air. The regulation does not place any requirements on proposed sensitive uses if modeled air pollutant levels fall below the action threshold. This ordinance only considers impacts from on-road motor vehicles, not impacts related to construction equipment or stationary sources.

A report with supporting documentation for the ordinance (SFPD 2008) provided a threshold to trigger action or mitigation of 0.2 µg/m³ of PM_{2.5} annual average exposure from roadway vehicles within a 150 meter (492 feet) maximum radius of a sensitive

receptor. The report applied the concentration-response function from Jerrett et al. (2005) that attributed 14 percent increase in mortality to a $10 \mu\text{g}/\text{m}^3$ increase in $\text{PM}_{2.5}$ to estimate an increase in non-injury mortality in San Francisco of about 21 excess deaths per million population per year from a $0.2 \mu\text{g}/\text{m}^3$ increment of annual average $\text{PM}_{2.5}$.

Distance for Significant Impact

The distance used for the radius around the project boundary should reflect the zone or area over which sources may have a significant influence. For cumulative thresholds, for both sources and receptors, this distance also determines the size of the source area, defined. To determine cumulative impacts from a prescribed zone of influence requires the use of modeling. The larger the radius, the greater the number of sources considered that may contribute to the risk and the greater the expected modeled risk increment. If the area of impact considered were grown to approach the scale of a city, the modeled risk increment would approach the risk level present in the ambient air.

A summary of research findings in ARB's Land Use Compatibility Handbook (ARB 2005) indicates that traffic-related pollutants were higher than regional levels within approximately 1,000 feet downwind and that differences in health-related effects (such as asthma, bronchitis, reduced lung function, and increased medical visits) could be attributed in part to the proximity to heavy vehicle and truck traffic within 300 to 1,000 feet of receptors. In the same summary report, ARB recommended avoiding siting sensitive land uses within 1,000 feet of a distribution center and major rail yard, which supports the use of a 1,000 feet evaluation distance in case such sources may be relevant to a particular project setting. A 1,000 foot zone of influence is also supported by Health & Safety Code §42301.6 (Notice for Possible Source Near School).

Some studies have shown that the concentrations of particulate matter tend to be reduced substantially or can even be indistinguishable from upwind background concentrations at a distance 1,000 feet downwind from sources such as freeways or large distribution centers. Zhu et al. (2002) conducted a systematic ultrafine particle study near Interstate 710, one of the busiest freeways in the Los Angeles Basin. Particle number concentration and size distribution were measured as a function of distances upwind and downwind of the I-710 freeway. Approximately 25 percent of the 12,180 vehicles per hour are heavy duty diesel trucks based on video counts conducted as part of the research. Measurements were taken at 13 feet, 23 feet, 55 feet, 252 feet, 449 feet, and 941 feet downwind and 613 feet upwind from the edge of the freeway. The particle number and supporting measurements of carbon monoxide and black carbon decreased exponentially and all constituents simultaneously tracked with each other as one moves away from the freeway. Ultrafine particle size distribution changed markedly and its number concentrations dropped dramatically with increasing distance. The study found that ultrafine particle concentrations measured 941 feet downwind of I-710 were indistinguishable from the upwind background concentration.

Impacted Communities

Starting in 2006, the Air District's CARE program developed gridded TAC emissions inventories and compiled demographic information that were used to identify

communities that were particularly impacted by toxic air pollution for the purposes of distributing grant and incentive funding. In 2009, the District completed regional modeling of TAC on a one kilometer by one kilometer grid system. This modeling was used to estimate cancer risk and TAC population exposures for the entire District. The information derived from the modeling was then used to update and refine the identification of impacted communities. One kilometer modeling yielded estimates of annual concentrations of five key compounds – diesel particulate matter, benzene, 1,3-butadiene, formaldehyde, and acetaldehyde – for year 2005. These concentrations were multiplied by their respective unit cancer risk factors, as established by OEHHA, to estimate the expected excess cancer risk per million people from these compounds.

Sensitive populations from the 2000 U.S. Census database were identified as youth (under 18) and seniors (over 64) and mapped to the same one kilometer grid used for the toxics modeling. Excess cancers from TAC exposure were determined by multiplying these sensitive populations by the model-estimated excess risk to establish a data set representing sensitive populations with high TAC exposures. TAC emissions (year 2005) were mapped to the one kilometer grid and also scaled by their unit cancer risk factor to provide a data set representing source regions for TAC emissions. Block-group level household income data from the U.S. Census database were used to identify block groups with family incomes where more than 40 percent of the population was below 185 percent of the federal poverty level (FPL). Poverty-level polygons that intersect high (top 50 percent) exposure cells and are within one grid cell of a high emissions cell (top 25 percent) were used to identify impacted areas. Boundaries were constructed along major roads or highways that encompass nearby high emission cells and low income areas. This method identified the following six areas as priority communities: (1) portions of the City of Concord; (2) Western Contra Costa County (including portions of the Cities of Richmond and San Pablo); (3) Western Alameda County along the Interstate-880 corridor (including portions of the Cities of Berkeley, Oakland, San Leandro, San Lorenzo, Hayward; (4) Portions of the City of San Jose. (5) Eastern San Mateo County (including portions of the Cities of Redwood City and East Palo Alto); and (6) Eastern portions of the City of San Francisco.

3.3.2 CONSTRUCTION, LAND USE AND STATIONARY SOURCE RISK AND HAZARD THRESHOLDS

The proposed options for local risk and hazards thresholds of significance are based on U.S. EPA guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. The thresholds consider reviews of recent health effects studies that link increased concentrations of fine particulate matter to increased mortality. The proposed thresholds would apply to both siting new sources and siting new receptors.

For new sources of TACs, thresholds of significance for a single source are designed to ensure that emissions do not raise the risk of cancer or non-cancer health impacts to cumulatively significant levels. For new sources of PM_{2.5}, thresholds are designed to ensure that PM_{2.5} concentrations are maintained below state and federal standards in all

areas where sensitive receptors or members of the general public live or may foreseeably live, even if at the local- or community-scale where sources of TACs and PM may be nearby.

Project Radius for Assessing Impacts

For a project proposing a new source or receptor it is recommended to assess impacts within 1,000 feet, taking into account both its individual and nearby cumulative sources (i.e. proposed project plus existing and foreseeable future projects). Cumulative sources are the combined total risk values of each individual source within the 1,000-foot evaluation zone. A lead agency should enlarge the 1,000-foot radius on a case-by-case basis if an unusually large source or sources of risk or hazard emissions that may affect a proposed project is beyond the recommended radius.

The 1,000 foot radius is consistent with findings in ARB's Land Use Compatibility Handbook (ARB 2005), the Health & Safety Code §42301.6 (Notice for Possible Source Near School), and studies such as that of Zhu et al (2002) which found that concentrations of particulate matter tend to be reduced substantially at a distance 1,000 feet downwind from sources such as freeways or large distribution centers.

Qualified Community Risk Reduction Plan

Within the framework of these thresholds, proposed projects would be considered to be less than significant if they are consistent with a qualified Community Risk Reduction Plan (CRRP) adopted by the local jurisdiction with enforceable measures to reduce the community risk.

Project proposed in areas where a CRRP has been adopted that are not consistent with the CRRP would be considered to have a significant impact.

Projects proposed in areas where a CRRP has not been adopted and that have the potential to expose sensitive receptors or the general public to emissions-related risk in excess of the thresholds below from any source would be considered to have a significant air quality impact.

The conclusion that land use projects that comply with qualified Community Risk Reduction Plans are less than significant is supported by CEQA Guidelines Sections 15030(a)(3) and 15064(h)(3), which provides that a project's contribution to a cumulative problem can be less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Increased Cancer Risk to Maximally Exposed Individual (MEI)

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of carcinogenic TACs from any source result in an increased cancer risk greater than 10.0 in one million, assuming a 70 year lifetime exposure. Under Board Option 1, within Impacted Communities as defined

through the CARE program, the significance level for cancer would be reduced to 5.0 in one million for new sources.

The 10.0 in one million cancer risk threshold for a single source is supported by EPA's guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. It is also the level set by the Project Risk Requirement in the Air District's Regulation 2, Rule 5 new and modified stationary sources of TAC, which states that the Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project risk exceeds a cancer risk of 10.0 in one million.

This threshold for an individual new source is designed to ensure that the source does not contribute a cumulatively significant impact. The justification for the Tiered Thresholds Option threshold of 5.0 in one million for new sources in an impacted community is that in these areas the cancer risk burden is higher than in other parts of the Bay Area; the threshold at which an individual source becomes significant is lower for an area that is already at or near unhealthy levels. However, even without a tiered approach, the recommended thresholds already address the burden of impacted communities via the cumulative thresholds: specifically, if an area has many existing TAC sources near receptors, then the cumulative threshold will be reached sooner than it would in another area with fewer TAC sources.

The single-source threshold for receptors is provided to address the possibility that within the area defined by the 1,000 foot radius there can be variations in risk levels that may be significant, below the corresponding cumulative threshold. Single-source thresholds assist in the identification of significant risks, hazards, or concentrations in a subarea, within the 1,000 foot radius.

Increased Non-Cancer Risk to MEI

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of non-carcinogenic TACs result in an increased chronic or acute Hazard Index (HI) from any source greater than 1.0. This threshold is unchanged under Tiered Thresholds Option.

A HI less than 1.0 represents a TAC concentration, as determined by OEHHA that is at a health protective level. While some TACs pose non-carcinogenic, chronic and acute health hazards, if the TAC concentrations result in a HI less than one, those concentrations have been determined to be less than significant.

Increased Ambient Concentration of PM_{2.5}

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of PM_{2.5} from any source would result in an average annual increase greater than 0.3 µg/m³. Under Tiered Thresholds Option, within Impacted Communities as defined through the CARE program, the significance level for a PM_{2.5} increment is 0.2 µg/m³.

If one applies the concentration-response of the median of the EPA consensus review (EPA 2005, BAAQMD 2010) and attributes a 1 percent increase in mortality to a $1 \mu\text{g}/\text{m}^3$ increase in $\text{PM}_{2.5}$, one finds an increase in non-injury mortality in the Bay Area of about 20 excess deaths per million per year from a $0.3 \mu\text{g}/\text{m}^3$ increment of $\text{PM}_{2.5}$. This is consistent with the impacts reported and considered significant by SFDPH (2008) using an earlier study (Jerrett et al. 2005) to estimate the increase in mortality from a $0.2 \mu\text{g}/\text{m}^3$ $\text{PM}_{2.5}$ increment.

The SFDPH recommended a lower threshold of significance for multiple sources but only considered roadway emissions within a 492 foot radius. This recommendation applies to a single source but considers all types of emissions within 1,000 feet. On balance, the Air District estimates that the SFDPH threshold and this proposed one, in combination with the cumulative threshold for $\text{PM}_{2.5}$, will afford similar levels of health protection.

The proposed $\text{PM}_{2.5}$ threshold represents the lower range of an EPA proposed Significant Impact Level (SIL). EPA interprets the SIL to be the level of ambient impact that is considered to represent a “significant contribution” to regional non-attainment. While this threshold was not designed to be a threshold for assessing community risk and hazards, it was designed to protect public health at a regional level by helping an area maintain the NAAQS. Since achieving and maintaining state and federal AAQS is a reasonable goal at the local scale, the SIL provides a useful reference for comparison.

This threshold for an individual new source is designed to ensure that the source does not contribute a cumulatively significant impact. The justification for the Tiered Thresholds Option threshold of $0.2 \mu\text{g}/\text{m}^3$ for new sources in an impacted community is that these areas have higher levels of diesel particulate matter than do other parts of the Bay Area; the threshold at which an individual source becomes significant is lower for an area that is already at or near unhealthy levels. However, even without a tiered approach, the recommended thresholds already address the burden of impacted communities via the cumulative thresholds: specifically, if an area has many existing $\text{PM}_{2.5}$ sources near receptors, then the cumulative threshold will be reached sooner than it would in another area with fewer $\text{PM}_{2.5}$ sources.

The single-source threshold for receptors is provided to address the possibility that within the area defined by the 1,000 foot radius there can be variations in risk levels that may be significant, below the corresponding cumulative threshold. Single-source thresholds assist in the identification of significant risks, hazards, or concentrations in a subarea, within the 1,000 foot radius.

3.3.2.1 ACCIDENTAL RELEASE OF ACUTELY HAZARDOUS AIR EMISSIONS

The BAAQMD currently recommends, at a minimum, that the lead agency, in consultation with the administering agency of the Risk Management Prevention Program (RMPP), find that any project resulting in receptors being within the Emergency Response Planning Guidelines (ERPG) exposure level 2 for a facility has a significant air quality impact. ERPG exposure level 2 is defined as "the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for

up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action."

Staff proposes continuing with the current threshold for the accidental release of hazardous air pollutants. Staff recommends that agencies consult with the California Emergency Management Agency for the most recent guidelines and regulations for the storage of hazardous materials. Staff proposes that projects using or storing acutely hazardous materials locating near existing receptors, and projects resulting in receptors locating near facilities using or storing acutely hazardous materials be considered significant.

The current Accidental Release/Hazardous Air Emissions threshold of significance could affect all projects, regardless of size, and require mitigation for Accidental Release/Hazardous Air Emissions impacts.

3.3.3 CUMULATIVE RISK AND HAZARD THRESHOLDS

Qualified Community Risk Reduction Plan

Proposed projects would be considered to be less than significant if they are consistent with a qualified Community Risk Reduction Plan (CRRP) adopted by the local jurisdiction with enforceable measures to reduce the community risk.

Project proposed in areas where a CRRP has been adopted that are not consistent with the CRRP would be considered to have a significant impact.

Projects proposed in areas where a CRRP has not been adopted and that have the potential to expose sensitive receptors or the general public to emissions-related risk in excess of the following thresholds from the aggregate of cumulative sources would be considered to have a significant air quality impact.

The conclusion that land use projects that comply with qualified Community Risk Reduction Plans are less than significant is supported by CEQA Guidelines Sections 15030(a)(3) and 15064(h)(3), which provides that a project's contribution to a cumulative problem can be less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

Increased Cancer Risk to Maximally Exposed Individual (MEI)

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of carcinogenic TACs from any source result in an increased cancer risk greater than 100.0 in one million.

The significance threshold of 100 in a million increased excess cancer risk would be applied to the cumulative emissions. The 100 in a million threshold is based on EPA guidance for conducting air toxics analyses and making risk management decisions at the facility and community-scale level. In protecting public health with an ample margin of

safety, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants (HAPs) by limiting risk to a level no higher than the one in ten thousand (100 in a million) estimated risk that a person living near a source would be exposed to at the maximum pollutant concentrations for 70 years (NESHAP 54 Federal Register 38044, September 14, 1989; CAA section 112(f)). One hundred in a million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on the District's recent regional modeling analysis.

Increased Non-Cancer Risk to MEI

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of non-carcinogenic TACs result in an increased chronic Hazard Index from any source greater than 10.0.

The Air District has developed an Air Toxics Hot Spots (ATHS) program that provides guidance for implementing the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly, 1987: chaptered in the California Health and Safety Code § 44300, et. al.). The ATHS provides that if the health risks resulting from the facility's emissions exceed significance levels established by the air district, the facility is required to conduct an airborne toxic risk reduction audit and develop a plan to implement measures that will reduce emissions from the facility to a level below the significance level. The Air District has established a non-cancer Hazard Index of ten (10.0) as ATHS mandatory risk reduction levels. The proposed cumulative chronic non-cancer Hazard Index threshold is consistent with the Air District's ATHS program.

Increased Ambient Concentration of PM_{2.5}

Emissions from a new source or emissions affecting a new receptor would be considered significant where ground-level concentrations of PM_{2.5} from any source would result in an average annual increase greater than 0.8 µg/m³.

If one applies the concentration-response function from the U.S. EPA assessment (U.S. EPA 2006) and attributes a 10 percent increase in mortality to a 10 µg/m³ increase in PM_{2.5}, one finds an increase in non-injury mortality in the Bay Area of about 50 excess deaths per year from a 0.8 µg/m³ increment of PM_{2.5}. This is greater the impacts reported and considered significant by SFDPH (2008) using an earlier study (Jerrett et al. 2005) to estimate the increase in mortality from a 0.2 µg/m³ PM_{2.5} increment (SFDPH reported 21 excess deaths per year). However, SFDPH only considered roadway emissions within a 492 foot radius. This proposed threshold applies to all types of emissions within 1,000 feet. In modeling applications for proposed projects, a larger radius results in a greater number of sources considered and higher modeled concentrations. On balance, the Air District estimates that the SFDPH threshold and this proposed one, in combination with the individual source threshold for PM_{2.5}, will afford similar levels of health protection.

The proposed cumulative PM_{2.5} threshold represents the middle range of an EPA proposed Significant Impact Level (SIL). EPA interprets the SIL to be the level of ambient impact that is considered to represent a "significant contribution" to regional non-attainment. While this threshold was not designed to be a threshold for assessing

community risk and hazards, it was designed to protect public health at a regional level by helping an area maintain the NAAQS. Since achieving and maintaining state and federal AAQS is a reasonable goal at the local scale, the SIL provides a useful reference for comparison. Furthermore, the $0.8 \mu\text{g}/\text{m}^3$ threshold is consistent with studies (Kleinman et al 2007) that examined the potential health impacts of roadway particles.

3.3.4 PLAN-LEVEL RISK AND HAZARD THRESHOLDS

Staff proposes plan-level thresholds that will encourage a programmatic approach to addressing the overall adverse conditions resulting from risks and hazards that many Bay Area communities experience. By designating overlay zones in land use plans, local land use jurisdictions can take preemptive action before project-level review to reduce the potential for significant exposures to risk and hazard emissions. While this will require more up-front work at the general plan level, in the long-run this approach is a more feasible approach consistent with Air District and CARB guidance about siting sources and sensitive receptors that is more effective than project by project consideration of effects that often has more limited mitigation opportunities. This approach would also promote more robust cumulative consideration of effects of both existing and future development for the plan-level CEQA analysis as well as subsequent project-level analysis.

For local plans to have a less-than-significant impact with respect to potential risks and hazards, overlay zones would have to be established around existing and proposed land uses that would emit these air pollutants. Overlay zones to avoid risk impacts should be reflected in local plan policies, land use map(s), and implementing ordinances (e.g., zoning ordinance). The overlay zones around existing and future risk sources would be delineated using the quantitative approaches described above for project-level review and the resultant risk buffers would be included in the General Plan (or the EIR for the General Plan) to assist in site planning. BAAQMD will provide guidance as to the methods used to establish the TAC buffers and what standards to be applied for acceptable exposure level in the updated CEQA Guidelines document. Special overlay zones of at least 500 feet (or an appropriate distance determined by modeling and approved by the Air District) on each side of all freeways and high volume roadways would be included in this proposed threshold.

The threshold of significance for plan impacts could affect all plan adoptions and amendments and require mitigation for a plan's air quality impacts. Where sensitive receptors would be exposed above the acceptable exposure level, the plan impacts would be considered significant and mitigation would be required to be imposed either at the plan level (through policy) or at the project level (through project level requirements).

3.3.5 COMMUNITY RISK REDUCTION PLANS

The goal of a Community Risk Reduction Plan would be to bring TAC and $\text{PM}_{2.5}$ concentrations for the entire community covered by the Plan down to acceptable levels as identified by the local jurisdiction and approved by the Air District. This approach

provides local agencies a proactive alternative to addressing communities with high levels of risk on a project-by-project approach. This approach is supported by CEQA Guidelines Section 15030(a)(3), which provides that a project's contribution to a cumulative problem can be less than cumulatively considerable "if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact." This approach is also further supported by CEQA Guidelines Section 15064(h)(3), which provides that a project's contribution to a cumulative effect is not considerable "if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem."

Qualified Community Risk Reduction Plans

- (A) A qualified Community Risk Reduction Plan adopted by a local jurisdiction should include, at a minimum, the following elements. The District's revised CEQA Guidelines provides the methodology to determine if a Community Risk Reduction Plan meets these requirements. Define a planning area;
- (B) Include base year and future year emissions inventories of TACs and PM2.5;
- (C) Include Air District-approved risk modeling of current and future risks;
- (D) Establish risk and exposure reduction goals and targets for the community in consultation with Air District staff;
- (E) Identify feasible, quantifiable, and verifiable measures to reduce emissions and exposures;
- (F) Include procedures for monitoring and updating the inventory, modeling and reduction measures in coordination with Air District staff;
- (G) Be adopted in a public process following environmental review.

4 CRITERIA POLLUTANT THRESHOLDS

4.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Construction	
Pollutant	Average Daily (pounds/day)
ROG (reactive organic gases)	54
NO _x (nitrogen oxides)	54
PM ₁₀ (exhaust) (particulate matter-10 microns)	82
PM _{2.5} (exhaust) (particulate matter-2.5 microns)	54
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices
Local CO (carbon monoxide)	None

Project Operations		
Pollutant	Average Daily (pounds/day)	Maximum Annual (tons/year)
ROG	54	10
NO _x	54	10
PM ₁₀	82	15
PM _{2.5}	54	10
Local CO	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

Plans
<ol style="list-style-type: none"> 1. Consistency with Current Air Quality Plan control measures 2. Projected VMT or vehicle trip increase is less than or equal to projected population increase

Regional Plans (Transportation and Air Quality Plans)
No net increase in emissions of criteria air pollutants and precursors

4.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

4.3.1 PROJECT CONSTRUCTION CRITERIA POLLUTANT THRESHOLDS

Staff proposes criteria pollutant construction thresholds that add significance criteria for exhaust emissions to the existing fugitive dust criteria employed by the Air District. While our current Guidelines considered construction exhaust emissions controlled by the overall air quality plan, the implementation of new and more stringent state and federal standards over the past ten years now warrants additional control of this source of emissions.

The average daily criteria air pollutant and precursor emission levels shown above are recommended as the thresholds of significance for construction activity for exhaust emissions. These thresholds represent the levels above which a project's individual emissions would result in a considerable contribution (i.e., significant) to the SFBAAB's existing non-attainment air quality conditions and thus establish a nexus to regional air quality impacts that satisfies CEQA requirements for evidence-based determinations of significant impacts.

For fugitive dust emissions, staff recommends following the current best management practices approach which has been a pragmatic and effective approach to the control of fugitive dust emissions. Studies have demonstrated (Western Regional Air Partnership, U.S.EPA) that the application of best management practices at construction sites have significantly controlled fugitive dust emissions. Individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent. In the aggregate best management practices will substantially reduce fugitive dust emissions from construction sites. These studies support staff's recommendation that projects implementing construction best management practices will reduce fugitive dust emissions to a less than significant level.

4.3.2 PROJECT OPERATION CRITERIA POLLUTANT THRESHOLDS

The proposed thresholds for project operations are the average daily and maximum annual criteria air pollutant and precursor levels shown above. These thresholds are based on the federal BAAQMD Offset Requirements to ozone precursors for which the SFBAAB is designated as a non-attainment area which is an appropriate approach to prevent further deterioration of ambient air quality and thus has nexus and proportionality to prevention of a regionally cumulative significant impact (e.g. worsened status of non-attainment). Despite non-attainment area for state PM₁₀ and pending nonattainment for federal PM_{2.5}, the federal NSR Significant Emission Rate annual limits of 15 and 10 tons per year, respectively, are proposed thresholds as BAAQMD has not established an Offset Requirement limit for PM_{2.5} and the existing limit of 100 tons per year is much less stringent and would not be appropriate in light of our pending nonattainment designation for the federal 24-hour PM_{2.5} standard. These thresholds represent the emission levels above which a project's individual emissions would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. The thresholds would be an evaluation of the incremental contribution of a project to a significant cumulative impact. These threshold levels are well-established in terms of existing regulations as promoting review of emissions sources to prevent cumulative deterioration of air quality. Using existing environmental standards in this way to establish CEQA thresholds of significance under Guidelines section 15067.4 is an appropriate and effective means of promoting consistency in significance determinations and integrating CEQA environmental review activities with other areas of environmental

regulation. (*See Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98, 111.⁴)

4.3.3 LOCAL CARBON MONOXIDE THRESHOLDS

The proposed carbon monoxide thresholds are based solely on ambient concentration limits set by the California Clean Air Act for Carbon Monoxide and Appendix G of the State of California CEQA Guidelines.

Since the ambient air quality standards are health-based (i.e., protective of public health), there is substantial evidence (i.e., health studies that the standards are based on) in support of their use as CEQA significance thresholds. The use of the ambient standard would relate directly to the CEQA checklist question. By not using a proxy standard, there would be a definitive bright line about what is or is not a significant impact and that line would be set using a health-based level.

The CAAQS of 20.0 ppm and 9 ppm for 1-hour and 8-hour CO, respectively, would be used as the thresholds of significance for localized concentrations of CO. Carbon monoxide is a directly emitted pollutant with primarily localized adverse effects when concentrations exceed the health based standards established by the California Air Resources Board (ARB).

In addition, Appendix G of the State of California CEQA Guidelines includes the checklist question: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation? Answering yes to this question would indicate that the project would result in a significant impact under CEQA. The use of the ambient standard would relate directly to this checklist question.

4.3.4 PLAN-LEVEL CRITERIA POLLUTANT THRESHOLDS

This proposed threshold achieves the same goals as the Air District's current approach while alleviating the existing analytical difficulties and the inconsistency of comparing a plan update with AQP growth projections that may be up to several years old. Eliminating the analytical inconsistency provides better nexus and proportionality for evaluating air quality impacts for plans.

Over the years staff has received comments on the difficulties inherent in the current approach regarding the consistency tests for population and VMT growth. First, the population growth estimates used in the most recent AQP can be up to several years older than growth estimates used in a recent plan update, creating an inconsistency in this analysis. Staff recommends that this test of consistency be eliminated because the Air

⁴ The Court of Appeal in the *Communities for a Better Environment* case held that existing regulatory standards could not be used as a definitive determination of whether a project would be significant under CEQA where there is substantial evidence to the contrary. Staff's proposed thresholds would not do that. The thresholds are levels at which a project's emissions would normally be significant, but would not be binding on a lead agency if there is contrary evidence in the record.

District and local jurisdictions all use regional population growth estimates that are disaggregated to local cities and counties. In addition, the impact to air quality is not necessarily growth but where that growth is located. The second test, rate of increase in vehicle use compared to growth rate, will determine if planned growth will impact air quality. Compact infill development inherently has less vehicle travel and more transit opportunities than suburban sprawl.

Second, the consistency test of comparing the rate of increase in VMT to the rate of increase in population has been problematic at times for practitioners because VMT is not always available with the project analysis. Staff recommends that either the rate of increase in VMT or vehicle trips be compared to the rate of increase in population. Staff also recommends that the growth estimates used in this analysis be for the years covered by the plan. Staff also recommends that the growth estimates be obtained from the Association of Bay Area Governments since the Air District uses ABAG growth estimates for air quality planning purposes.

4.3.5 CRITERIA POLLUTANT THRESHOLDS FOR REGIONAL PLANS

Regional plans include the Regional Transportation Plan prepared by the Metropolitan Transportation Commission (MTC) and air quality plans prepared by the Air District.

The Regional Transportation Plan (RTP), also called a Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan is the mechanism used in California by both Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) to conduct long-range (minimum of 20 years) planning in their regions. MTC functions as both the regional transportation planning agency, a state designation, and, for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of comprehensive transportation system that includes mass transit, highway, airport, seaport, railroad, bicycle and pedestrian facilities. The performance of this system affects such public policy concerns as air quality, environmental resource consumption, social equity, "smart growth," economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process requires developing strategies for operating, managing, maintaining, and financing the area's transportation system in such a way as to advance the area's long-term goals.

The Air District periodically prepares and updates plans to achieve the goal of healthy air. Typically, a plan will analyze emissions inventories (estimates of current and future emissions from industry, motor vehicles, and other sources) and combine that information with air monitoring data (used to assess progress in improving air quality) and computer modeling simulations to test future strategies to reduce emissions in order to achieve air quality standards. Air quality plans usually include measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources. Bay Area air quality plans are prepared with the cooperation of MTC and the Association of Bay Area Governments (ABAG).

The proposed threshold of significance for regional plans is no net increase in emissions including criteria pollutant emissions. This threshold serves to answer the State CEQA Guidelines Appendix G sample question: “Would the project Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?”

5 ODOR THRESHOLDS

5.2 PROPOSED THRESHOLDS OF SIGNIFICANCE

Project Operations – Source or Receptor	Plans
Five confirmed complaints per year averaged over three years	Identify the location, and include policies to reduce the impacts, of existing or planned sources of odors

5.3 JUSTIFICATION AND SUBSTANTIAL EVIDENCE SUPPORTING THRESHOLDS

Staff proposes revising the current CEQA significance threshold for odors to be consistent with the Air District’s regulation governing odor nuisances (Regulation 7—Odorous Substances). The current approach includes assessing the number of unconfirmed complaints which are not considered indicative of actual odor impacts. Basing the threshold on an average of five confirmed complaints per year over a three year period reflects the most stringent standards derived from the Air District rule and is therefore considered an appropriate approach to a CEQA evaluation of odor impacts.

Odors are generally considered a nuisance, but can result in a public health concern. Some land uses that are needed to provide services to the population of an area can result in offensive odors, such as filling portable propane tanks or recycling center operations. When a proposed project includes the siting of sensitive receptors in proximity to an existing odor source, or when siting a new source of potential odors, the following qualitative evaluation should be performed.

When determining whether potential for odor impacts exists, it is recommended that Lead Agencies consider the following factors and make a determination based on evidence in each qualitative analysis category:

- ▶ **Distance:** Use the screening-level distances in Table 9.
- ▶ **Wind Direction:** Consider whether sensitive receptors are located upwind or downwind from the source for the most of the year. If odor occurrences associated

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with the source are seasonal in nature, consider whether sensitive receptors are located downwind during the season in which odor emissions occur.

- ▶ **Complaint History:** Consider whether there is a history of complaints associated with the source. If there is no complaint history associated with a particular source (perhaps because sensitive receptors do not already exist in proximity to the source), consider complaint-history associated with other similar sources in BAAQMD’s jurisdiction with potential to emit the same or similar types of odorous chemicals or compounds, or that accommodate similar types of processes.
- ▶ **Character of Source:** Consider the character of the odor source, for example, the type of odor events according to duration of exposure or averaging time (e.g., continuous release, frequent release events, or infrequent events).
- ▶ **Exposure:** Consider whether the project would result in the exposure of a substantial number of people to odorous emissions.

Table 9 – Screening Distances for Potential Odor Sources	
Type of Operation Project Screening	Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Coffee Roaster	1 mile

California Integrated Waste Management Board (CIWMB). Facilities that are regulated by the CIWMB (e.g. landfill, composting, etc.) are required to have Odor Impact Minimization Plans (OIMP) in place and have procedures that establish fence line odor detection thresholds. The Air District recognizes a Lead Agency’s discretion under CEQA to use established odor detection thresholds as thresholds of significance for CEQA review for CIWMB regulated facilities with an adopted OIMP.

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Bay Area Air Quality Management District

Guidance for Lead Agencies to Develop an Offsite Mitigation Program

The Bay Area Air Quality Management District (Air District) considers the use of an offsite mitigation program as a feasible mitigation measure pursuant to the California Environmental Quality Act (CEQA) for construction or operational emissions. This mitigation strategy has been implemented by land use projects throughout California as a means to reduce a project's significant air quality impacts below the significance level. Land use development projects that exceed lead agency or air district thresholds of significance after implementing all feasible onsite mitigation measures should evaluate the feasibility of implementing an offsite mitigation measure. The project applicant would provide funding to the lead agency (or the Air District) to reduce the project's air quality impacts through implementation of emission reduction projects within the jurisdiction where the project is located. Offsite mitigation programs can be initiated by the project applicant or a lead agency and implemented through the CEQA process.

The general guidance provided below could be used by lead agencies to establish an offsite mitigation program that they would implement for all projects subject to CEQA within their jurisdiction. Air District staff would be available to assist project applicants or lead agencies in developing an offsite mitigation program. If a lead agency is not interested in developing an offsite mitigation program for their jurisdiction, the lead agency or project applicant could contact the Air District to discuss implementation of an offsite mitigation measure for a particular project.

Justification: The San Francisco Bay Area Air Basin (Air Basin) exceeds State and National Ambient Air Quality standards (AAQS) for ozone and particulate matter. New land use projects would contribute air pollutant emissions to an existing cumulatively significant air quality impact when they exceed the Air District's thresholds of significance. A project exceeding these thresholds of significance will hinder the region's ability to attain health based State and National AAQS and subject the region to potential Environmental Protection Agency sanctions for failure to attain the standards.

In addition to criteria pollutants (ROG, NOx, PM), a project may result in an increase in greenhouse gases (GHG) that exceed the Air District's significance thresholds. These thresholds of significance were developed based on the State's plan to minimize California's contribution to global warming, and the effect of global warming on the Bay Area. Projects that exceed the GHG thresholds of significance would hinder the State wide plan to address global warming and should also consider the feasibility of reducing any increase in GHG above the Air District's significance thresholds through an offsite mitigation program.

Process: An offsite mitigation measure would be integrated within the normal environmental review process implemented by a lead agency. The applicant would include an air quality analysis, based on Air District methodologies, of their project when they submit their project application to the lead agency. In performing their review of the project application, the lead agency would determine if the project would result in any air quality impacts above the Air District's thresholds of significance. If any emissions from the project are above the Air District's thresholds of significance, the lead agency would determine the feasibility of applying an offsite mitigation measure to reduce the projects' impacts below the significance level. If determined to be feasible, the lead agency would include the offsite mitigation measure within the environmental document, conditions of approval and mitigation monitoring and reporting program (MMRP) for the project.

Implementation: The lead agency would determine the annual amount of emissions that would need to be reduced through an offsite mitigation measure by comparing the project's calculated emissions for each pollutant with the lead agencies or Air District thresholds of significance. Any project emissions above the lead agencies or Air District's thresholds would be annualized to determine the tons per year that would need to be reduced. This would provide the lead agency with the total tons of emissions per pollutant that would need to be reduced through the offsite mitigation measure to reduce the project's air quality impacts below the significance level. The following example will illustrate how a lead agency determines the annual tons of emissions.

	Project Annual Emissions Est. Tons/Year	Thresholds Tons/Year	Tons Over Threshold
NOx	12.5	10.0	2.5
ROG	7.5	10.0	NA
PM ₁₀	15.9	15.0	.9
PM _{2.5}	6.2	10.0	NA
GHG	1900	1,100	800

Once the lead agency knows the amount of emissions that will need to be reduced in an offsite mitigation measure, they would multiply the amount of pollutants in total tons per year by an established cost per ton of reducing each pollutant. The applicant would then commit to providing the funding to the lead agency prior to project construction to fund the offsite mitigation projects. Given Air District experience in administering grants for emission reduction projects, with adequate funding, the lead agency or Air District can bring about sufficient emission reductions from existing sources of emissions to fully and permanently mitigate the net air emissions from a land use development project. The emission reduction projects will permanently reduce emissions, because even after the useful life of the offsite mitigation project has ended, the funded equipment, device or vehicle will be replaced with equipment, devices or vehicles that are as clean as or cleaner than the original.

Identifying Offsite Projects: The lead agency would identify candidate projects within their jurisdiction that could be funded with monies paid by project applicants to reduce their air quality impacts below the significance level. The emission reduction projects would have to be from sources of emissions that are not required by any existing law to reduce their emissions. In essence, the funds derived from an offsite mitigation measure program should not be used to subsidize emission reduction projects that are required by law to reduce their emissions. A sample list of the types of offsite projects that could be funded through an offsite mitigation program is provided below:

- Retrofitting and or replacing heavy duty diesel engines and trucks (on or off road) with new cleaner engines and trucks.
- Retrofitting stationary sources such as back up generators or boilers with new technologies that reduce emissions.
- Replacing diesel agriculture water pumps with alternative fuels
- Fund projects within a jurisdictions adopted bicycle/pedestrian plans
- Replace non-EPA wood burning devices with natural gas or EPA approved fireplaces.
- Provide energy efficiency upgrades at residential, commercial or government buildings.
- Electrification of loading docks at distribution warehouses
- Install alternative energy supply on buildings
- Replace older landscape maintenance equipment with newer lower emission equipment.

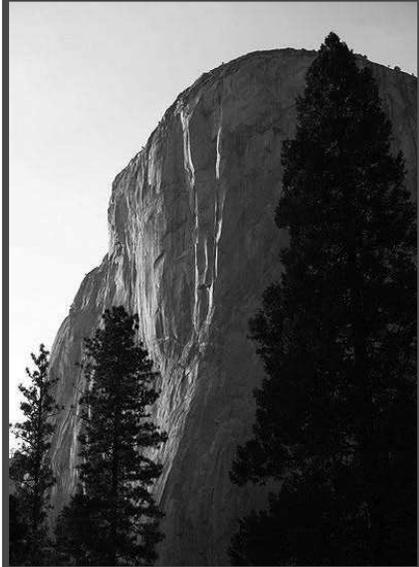
Offsite Fee Calculations: The lead agency would identify potential offsite mitigation projects within their jurisdiction, and the cost per ton to achieve the emission reductions from each type of project. The project applicant and or lead agency would then multiply the number of tons of emission reductions needed to reduce a significant below the adopted significance thresholds by the cost per ton of emission reductions identified by the lead agency. The lead agency would be expected to add an administrative fee to implement the offsite mitigation program, usually a percentage of the total offsite mitigation fee. This calculation would provide the total offsite mitigation measure fee that the applicant would be required to pay. The lead agency would then be responsible for ensuring the emission reduction projects were funded and the emission reductions achieved over the life of the funded project.



Quantifying Greenhouse Gas Mitigation Measures

A Resource for Local Government
 to Assess Emission Reductions from
 Greenhouse Gas Mitigation Measures

August, 2010



Quantifying Greenhouse Gas Mitigation Measures

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California Air Pollution Control Officers
Association

with

Northeast States for
Coordinated Air Use Management

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Disclaimer

The California Air Pollution Control Officers Association (CAPCOA) has prepared this report on quantifying greenhouse gas emissions from select mitigation strategies to provide a common platform of information and tools to support local governments.

This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which a city or county chooses to address greenhouse gas emissions in the context of projects it reviews, or in the preparation of its General Plan.

This paper has been prepared at a time when California law and regulation, as well as accepted practice regarding how climate change should be addressed in government programs, is undergoing change. There is pending litigation that may have bearing on these decisions, as well as active legislation at the federal level. In the face of this uncertainty, local governments are working to understand the new expectations, and how best to meet them. This paper is provided as a resource to local policy and decision makers to enable them to make the best decisions they can during this period of uncertainty.

Finally, in order to provide context for the quantification methodologies it describes, this report reviews requirements, discusses policy options, and highlights methods, tools, and resources available; these reviews and discussions are not intended to provide legal advice and should not be construed as such. Questions of legal interpretation, or requests for legal advice, should be directed to the jurisdiction's counsel.

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- A. Glossary of Terms
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- D. Building Quantification Methods
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Executive Summary

This report on *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* was prepared by the California Air Pollution Control Officers Association with the Northeast States for Coordinated Air Use Management and the National Association of Clean Air Agencies, and with technical support from Environ and Fehr & Peers. It is primarily focused on the quantification of project-level mitigation of greenhouse gas emissions associated with land use, transportation, energy use, and other related project areas. The mitigation measures quantified in the Report generally correspond to measures previously discussed in CAPCOA's earlier reports: *CEQA and Climate Change*; and *Model Policies for Greenhouse Gases in General Plans*. The Report does not provide policy guidance or advocate any policy position related to greenhouse gas emission reduction.

The Report provides a discussion of background information on programs and other circumstances in which quantification of greenhouse gas emissions is important. This includes voluntary emission reduction efforts, project-level emission reduction efforts, reductions for regulatory compliance, and reductions for some form of credit. The information provided covers basic terms and concepts and again, does not endorse or provide guidance on any policy position.

Certain key concepts for quantification are covered in greater depth. These include baseline, business-as-usual, types of emission reductions, project scope, lifecycle analysis, accuracy and reliability, additionality, and verification.

In order to provide transparency and to enhance the understanding of underlying strengths and weaknesses, the Report includes a detailed explanation of the approaches and methods used in developing the quantification of the mitigation measures. There is a summary of baseline methods (which are discussed in greater detail in Appendix B) as well as a discussion of methods for the measures. This includes the selection process for the measures, the development of the quantification approaches, and limitations in the data used to derive the quantification.

The mitigation measures were broken into categories, and an overview is provided for each category. The overview discusses specific considerations in quantifying emissions for measures in the category, as well as project-specific data the user will need to provide. Where appropriate and where data are readily available, the user is directed to relevant data sources. In addition, some tables and other information are included in the appendices.

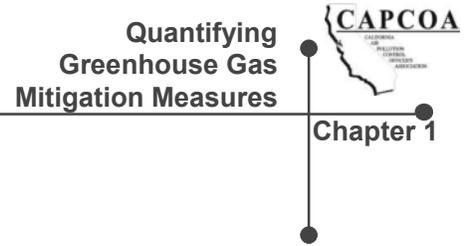
The mitigation measures are presented in Fact Sheets. An overview of the Fact Sheets is provided which outlines their organization and describes the layout of information. The Report also includes a step-by-step guide to using a Fact Sheet to quantify a project, and discusses the use of Fact Sheets outside of California. The Report also discusses the grouping of the measures, and outlines procedures and limitations for

quantifying projects where measures are combined either within or across categories. These limitations are critical to ensure that emission reductions are appropriately quantified and are not double counted. As a general guide, approximate ranges of effectiveness are provided for each of the measures, and this is presented in tables at the end of Chapter 6. These ranges are for reference only and should not be used in lieu of the actual Fact Sheets; they do not provide accurate quantification on a project-specific basis.

The Fact Sheets themselves are presented in Chapter 7, which includes an index of the Fact Sheets and cross references each measure to measures described in CAPCOA's earlier reports: *CEQA and Climate Change*; and *Model Policies for Greenhouse Gases in General Plans*. Each Fact Sheet includes a description of the measure, assumptions and limitations in the quantification, a baseline methodology, and the quantification of the measure itself. There is also a sample project calculation, and a discussion of the data and studies used in the development of the quantification.

In the Appendices, there is a glossary of terms. The baseline methodology is fully explained, and there is additional supporting information for the transportation methods and the non-transportation methods. Finally, the Report includes select reference tables that the user may consult for select project-specific factors that are called for in some of the Fact Sheets.

Chapter 1: Introduction



Background

The California Air Pollution Control Officers Association (CAPCOA) prepared the report, *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (Quantification Report, or Report), in collaboration with the Northeast States for Coordinated Air Use Management (NESCAUM) and the National Association of Clean Air Agencies (NACAA), and with contract support from Environ, and Fehr & Peers, who performed the technical analysis. The Report provides methods for quantifying emission reductions from a specified list of mitigation measures, primarily focused on project-level mitigation. The emissions calculations include greenhouse gases (GHGs), particulate matter (PM), carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), and reactive organic gases (ROG), as well as toxic air pollutants, where information is available.

The measures included in this Report were selected because they are frequently considered as mitigation for GHG impacts, and standardized methods for quantifying emissions from these projects were not previously available. Measures were screened on the basis of the feasibility of quantifying the emissions, the availability of robust and meaningful data upon which to base the quantification, and whether the measures (alone or in combination with other measures) would result in appreciable reductions in GHG emissions. CAPCOA does not mean to suggest that other measures should not be considered, or that they might not be effective or quantifiable; on the contrary, there are many options and approaches to mitigate emissions of GHGs. CAPCOA sought to provide a high quality quantification tool to local governments with the broadest applicability possible, given the resource limitations for the project. CAPCOA encourages local governments to be bold and creative as they approach the challenge of climate change, and does not intend this Report to limit the scope of measures considered for mitigation.

The majority of the measures in the Report have been discussed in CAPCOA's previous resource documents: *CEQA and Climate Change*, and *Model Policies for Greenhouse Gases in General Plans*. The measures in this Report are cross-referenced to those prior reports. The quantification methods provided here are largely project-level in nature; they can certainly inform planning decisions, however a complete planning-level analysis of mitigation strategies will entail additional quantification.

In developing the quantification methods, CAPCOA and its contractors conducted an extensive literature review. The goal of the Report was to provide accurate and reliable quantification methods that can be used throughout California and adapted for use outside of the state as well.

Intent and Audience

This document is intended to further support the efforts of local governments to address the impacts of GHG emissions in their environmental review of projects and in their planning efforts. Project proponents and others interested in quantifying mitigation measures will also find the document useful.

The guidance provided in this Report specifically addresses appropriate procedures for applying quantification methods to achieve accurate and reliable results. The Report includes background information on programs and concepts associated with the quantification of GHG emissions. The Report does not provide policy guidance on any of these issues, nor does it dictate how any jurisdiction should address questions of policy. Policy considerations are left to individual agencies and their governing boards. Rather, this Report is intended to support the creation of a standardized approach to quantifying mitigation measures, to allow emission reductions and measure effectiveness to be considered and compared on a common basis.

Because the quantification methods in this Report were developed to meet the highest standards for accuracy and reliability, CAPCOA believes they will be generally accepted for most quantification purposes. The decision to accept any quantification method rests with the reviewing agency, however. Further, while the Report discusses the quantification of GHG emissions for a variety of purposes, including the quantification of reductions for credit, using these methods does not guarantee that credit will be awarded.

Using the Document

Chapters 2 and 3 of this Report discuss programs and concepts associated with GHG quantification. They are intended to provide background information for those interested in the context in which reductions are being made. Chapter 4 discusses the underpinnings of the quantification methods and specifically addresses limitations in the data used as well as limitations in applying the methods; it is important for anyone using this Report to review Chapter 4. Chapter 5 provides an overview of the mitigation measure categories, including key considerations in the quantification of emission reductions in those categories. Chapter 6 explains how to use the fact sheets for each measure's quantification method, and also discusses the effectiveness of the measures and how combining measures changes the effectiveness.

Once the user understands the quantification context, and the limitations of the methods, the fact sheets can be used like recipes in a cookbook. In using the fact sheets, however, CAPCOA strongly advises the reader to pay careful attention to the assumptions and limitations set forth for each individual measure, and to make sure that these are respected and appropriately considered.

The fact sheets with the actual quantification methods for each individual measure are contained in Chapter 7. The baseline methods are explained in Appendix B. It is the responsibility of the user to ensure that all data inputs are provided as called for in the methods, and that the data are of appropriate quality.

CAPCOA will not be able to provide case-by-case review or adjustments for specific projects outside of the provision for project-specific data inputs that is part of each fact sheet. Questions about individual projects may be referred to your local air district.

As a final note, the methods contained in this document include generalized information about the measures themselves. This information includes emission factors, usage rates, and other data from various sources, most commonly published data from public agencies. The data were carefully reviewed to ensure they represent the best information available for this purpose. The use of generalized information allows the quantification methods to be used across a range of circumstances, including variations in geographical location, climate, and population density, among others.

Where good quality, project-specific data is available that provides a superior characterization of a particular project, it should be used instead of the more generalized data presented here. The methods provided for baseline and mitigated emissions scenarios allow for such substitution. The local agency reviewing the project should review the project-specific data, however, to ensure that it meets standards for data quality and will not result in an inappropriate under- or overestimation of project emissions or mitigation.

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Chapter 2: The Purpose of Quantifying Mitigation Measures

Quantification Framework

The Quantification Report has been prepared to support a range of quantification needs. It is based on the premise that quantification of GHG emissions and reductions should rest on a foundation of clear assumptions, limits, and calculations. When these elements and the methods of applying them are transparent, a common “language” is created that allows us to talk about, compare, and evaluate GHGs with confidence that we are looking at “apples to apples.”

For the purpose of this report, GHGs are the six gases identified in the Kyoto Protocol: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). GHGs are expressed in metric tons (MT) of CO₂e (carbon dioxide equivalents). Individual GHGs are converted to CO₂e by multiplying values by their global warming potential (GWP). Global warming potentials represent a ratio of a gas’ heat trapping characteristics compared to CO₂, which has a global warming potential of 1.

As a general rule, the quantification methods in this report are only accurate to the degree that the project adheres to the assumptions, limitations, and other criteria specified for a given measure. Where specific data inputs are indicated for either the baseline or the project scenario calculations, those data must be provided for the calculations to be valid. Further, the quality of the data used will substantially impact the quality of the results achieved. For example, if a calculation method calls for a traffic count, the calculations can’t be made without supplying a traffic count number. However, the number used could be a rough estimate, could be based on a small, one-time sample, or could be derived through a full traffic study over a representative period of time or times. Clearly, using a rough estimate for any of the data inputs will yield results that are less accurate than they would be if higher quality data inputs were provided.

This does not mean that rough estimates cannot be used. There will be times when the quantification does not need to be precise. In order to speak the common language, however, it is important to identify how precise your data inputs are. It is also important to give careful consideration to the intended use of the quantification, to make sure that the results you achieve will be sufficiently rigorous to support the conclusions you draw from them.

The quantification methods in this report rely on very specific assumptions and limitations for each mitigation measure. Unlike the discussion of data inputs, the measure assumptions and limits affect more than the precision of the calculations: they determine whether the calculation is valid at all. For example, there is a method for calculating GHG reductions for each percentage in improvement in building energy use beyond the performance standards in California’s Title 24; that method states that the measure is specifically for electricity and natural gas use in residential and commercial

buildings subject to Title 24. If the building is located outside of California, where Title 24 is not applicable, the method will not yield accurate results unless the baseline assumptions are adjusted to reflect the standards that actually apply. Further, the measure effectiveness is based on assumptions that certain other energy efficiency measures are also applied (such as third-party HVAC-commissioning); if those additional measures are not applied, the calculated reductions will not be accurate and will overestimate the reductions compared to what will actually be achieved.

There may be situations where you choose to apply a method even if the assumptions do not match the specific conditions of the project; while CAPCOA does not recommend this, if you do it, it is imperative that any deviations are clearly identified. While you may still be able to calculate a reduction for your measure, in many cases the error in your result will be so large that any conclusions you would draw from the analysis could be completely wrong.

Quantifying Measures for Different Purposes

There are several reasons that a person might implement measures to reduce GHG emissions. Some measures are implemented simply because it's a good thing to do. Knowing how many metric tons of GHG emissions were reduced might not be important in that case. There are other reasons for undertaking a project to reduce GHGs, however, and for some of these purposes quantification (and verification) become increasingly important, and sensitive. This chapter discusses the role of quantification, and to a lesser extent verification, in reductions undertaken for a range of reasons. These include: voluntary reductions, reductions undertaken specifically to mitigate current or future impacts, reductions for regulatory compliance, and reductions where some form of credit is being sought, including credits that may be traded on a credit exchange. The purpose for which reductions are quantified will determine the level of detail involved in the quantification, as well as the degree of verification needed to support the quantification. As stated previously, this discussion is provided for information purposes only; it should not be construed to advocate or endorse any particular policy position.

Voluntary Reductions

Voluntary reductions of GHG emissions are reductions that are not required for any reason, including a regulation, law, or other form of standard. Even when reductions are not mandatory, however, there may be reasons to quantify them. The project proponent may simply want to know how effective the project is. Examples of this would be when a project is undertaken in an educational setting, or to demonstrate the general feasibility of a concept, or promote an image of environmental responsibility. In such a case, the focus may be on implementing the project more than documenting exactly how many tons of CO₂e have been reduced,



and a reasonable estimate might be sufficient. The project proponent may wish to track reductions to fulfill an organizational policy or commitment, or to establish a track record in GHG reductions. For these purposes, the quantification does not need to be precise, but it should still be based on sound principles and accepted methods.

When reductions are purely voluntary, they may be estimated using the methods contained in this document, even if all of the variables are not known, or if some of the assumptions are not fully supported by the specifics of the project. If the quantification is performed without the level of detail outlined in the method for a given measure (or specified for the baseline calculations), the results will be less accurate. The same is true if a method is used in a situation where the assumptions are not fully supported, or if the method is used outside the noted limitations. As one would expect, the greater the degree of variation from the conditions put forth in the fact sheets, the less accurate the quantification will be. Significant deviation can result in very large errors.



If there is any possibility that the project proponent may at some point wish to use the reductions to fulfill a future regulatory or mitigation requirement, or seek some form of credit for the reductions, the proponent should not deviate from the methods and should ensure that all necessary data are included, and all assumptions and limitations are appropriately addressed. Acceptance of the quantification methods in this Report to fulfill any requirement is solely at the discretion of the approving agency. Use of these methods does not guarantee that credit of any kind will be awarded for reductions made.

Reductions to Mitigate Current or Future Impacts

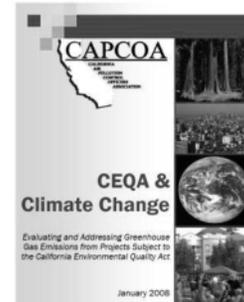
One of the most common reasons for quantifying emissions of GHG is to analyze and mitigate current or future impacts of specific actions or activities. This can include project-level impacts, such as those evaluated under the California Environmental Quality Act (CEQA), or plan-level impacts, such those resulting from the implementation of a General Plan or Climate Action Plan. Quantification of projects and mitigation under CEQA was the main focus in preparing this guidance document. Most of the measures quantified in the Report are project-level in nature. Many of these are also good examples of the kinds of policies and actions that would be included in a General Plan or a Climate Action Plan. The quantification methods provided here can be used to support conclusions about the effectiveness of different measures in a planning context; however, a full analysis of plan-level impacts will require consideration of additional factors, depending on the nature of the measure. Some of the measures have been specifically identified as General Plan measures, and a discussion is included about appropriate analysis of these measures, where study data exist to support such analysis.

Project-Level Mitigation: Existing environmental law and policy requires that environmental impacts of projects be evaluated and disclosed to the public, and where those impacts are potentially significant, that they be mitigated. At the federal level, the National Environmental Protection Act (NEPA) governs this evaluation. Many states have their own programs as well; in California, the California Environmental Quality Act, or CEQA, sets forth the requirements and the framework for the review.

The responsibility to evaluate impacts, to determine significance, and to define appropriate mitigation rests with the Lead Agency. This is typically a city or county with land-use decision-making authority, although other agencies can be Lead Agencies, depending on the nature of the project and the jurisdiction of the agency.

Guidance on CEQA and Climate Change: There are currently two resources for Lead Agencies on incorporating considerations of climate change into their CEQA processes. The first was prepared by CAPCOA, and the most recent is an amendment to the official CEQA Guidelines prepared by the California Natural Resources Agency (Resources Agency).

CAPCOA Guidance- In January of 2008, CAPCOA released a resource document, “CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act,” that discussed different approaches to determining whether GHG emissions from projects are significant under CEQA. It reviewed the models and other tools available at that time for conducting GHG analyses, and the document also contained a list of mitigation measures. A copy of the report is available at <http://www.capcoa.org>.



Resources Agency Guidance- Since the release of that report, the California Natural Resources Agency (Resources Agency) finalized its guidance on GHG emissions and CEQA in December of 2009. Under Senate Bill 97 (Chapter 148, Statutes of 2007), the Governor’s Office of Planning and Research (OPR) was required to prepare amendments to the state’s CEQA Guidelines addressing analysis and mitigation of the potential effects of GHG emissions in CEQA documents. The legislation required the Resources Agency to adopt the amended Guidelines by 2010.

The CEQA Guidelines Amendments adopted by the Resources Agency made material changes to 14 sections of the Guidelines. The changes include dealing with the



determination of significance (principally in Public Resource Code Section 15064) and cumulative impacts, as well as areas such as the consultation process for the draft EIR, the statement of overriding considerations, the environmental setting, mitigation measures, and tiering and streamlining. Overall, the discussion of determining significance in

these amendments is consistent with the earlier report released by CAPCOA.

In the Final Statement of Reasons (SOR) for the adoption of the amendments to the CEQA Guidelines, the Resources Agency makes two points that are important with regard to quantification of GHG emissions from projects. First, it states that the Guidelines “appropriately focus on a project’s potential incremental contribution of GHGs” and that the amendments “expressly incorporate the fair argument standard.”¹ This sets the parameters for the analysis to be performed. The Resources Agency further states that the analysis for GHGs must be consistent with existing CEQA principles, which includes standards for the substantial evidence needed to support findings.

Second, the Final SOR specifically states that the amendments “interpret and make specific statutory CEQA provisions and case law ... determining the significance of GHG emissions that may result from proposed projects.”² In this context, they cite specific case law as well as CEQA Guidelines Section 15144 that require a lead agency to “meaningfully attempt to quantify the Project’s potential impacts on GHG emissions and determine their significance.”³

Complete copies of the 2009 CEQA Guidelines Amendments and the Final Statement of Reasons may be downloaded at: <http://ceres.ca.gov/ceqa/docs/>.

Quantification of Projects: Project level quantification, especially as it pertains to CEQA, was CAPCOA’s main focus in developing this Report. The baseline conditions and quantification methods were selected to be consistent with the implementation of AB 32, as well as the Scoping Plan developed by ARB. The list of mitigation measures selected for the Report reflects the types of strategies that local governments and project proponents have shown interest in, and sought direction on quantifying. For the most part, they entail clearly delineated boundary conditions, and have been designed to be applicable across a range of circumstances.

This Quantification Report does not provide any policy guidance on what amount of GHG emissions would be significant. The determination of significance, including any thresholds, is the exclusive purview of the Lead Agency and its policy board. CAPCOA’s Quantification Report provides methods to quantify emissions from specific types of mitigation projects or measures. It is based on a careful review of existing studies and determinations to develop rigorous quantification methods that meet the substantial evidence requirements of CEQA.

A project proponent or reviewer who wishes to use these methods to quantify emissions for the purpose of complying with CEQA must adhere to the assumptions and limitations

¹ California Natural Resources Agency: “Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing and Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97,” December, 2009; p 12.

² Ibid: p. 18.

³ Ibid: p. 18.

specified in the methods for each project type. If these assumptions and limitations are not followed, the quantification will not be valid. Ultimately, the Lead Agency will have the responsibility to review and decide whether to allow any requests for deviations from the method, and to determine whether those deviations have a substantive impact on the results. Lead Agencies may contact their local air district for assistance in making such a review, but CAPCOA will not be in a position to provide any case-by-case review of changes to the quantification methods in this report.

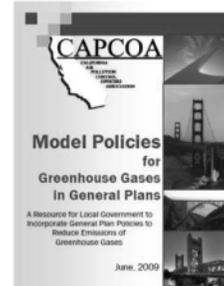
As stated previously, where good quality, project-specific data are available, they should be substituted for the more generalized data used in the baseline and mitigation emissions calculations. The quality of the data inputs can significantly affect the accuracy and reliability of the results. When quantification is performed for CEQA compliance, CAPCOA recommends that project-specific data be as robust as possible. We discourage the use of approximations or unsubstantiated numbers. In any case, CAPCOA strongly recommends that the source(s) and/or basis of all project-specific data supplied by the project proponent be clearly identified in the analysis, and the limitations of the data be discussed.

Plan-Level Mitigation: Cities and counties, as well as other entities, develop environmental planning documents. The most common are General Plans, which specify the blueprint for land-use, transportation, housing, growth, and resource management for cities, counties, and regions. These plans are periodically updated, and in recent updates, the California Attorney General has put jurisdictions on notice that their plans must consider climate change.

A stand-alone plan that considers climate change is a Climate Action Plan. Climate Action Plans can be developed for a school or company, for a city, county, region, or larger jurisdiction. A Climate Action Plan will typically identify a reduction target or commitment, and then set forth the complement of goals, policies, measures, and ordinances that will achieve the target. These policies and other strategies will typically include measures in transportation, land use, energy conservation, water conservation, and other elements.

Guidance on Planning and Climate Change: CAPCOA prepared a guidance document on GHGs and General Plans for local governments. There are also several important processes under way that will have a significant impact on the planning process in the coming years. These include the early implementation of Senate Bill 375 (Steinberg, Statutes of 2008); the development of new General Plan Guidelines; and statewide planning for adaptation to the impacts of climate change. They are described below.

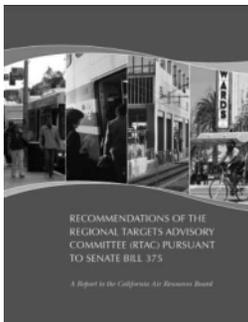
CAPCOA Guidance for General Plans- In June of 2009, CAPCOA released “*Model Policies for Greenhouse Gases in General Plans: A Resource for Local Government to Incorporate General Plan Policies to Reduce Emissions of Greenhouse Gases.*” This document embodied a menu of GHG mitigation measures that could



be included in a General Plan or a Climate Action Plan. It was structured around the elements of a General Plan, provided model language that could be taken and dropped into a plan, and also provided a worksheet for evaluating which measures to use. The CAPCOA Model Policies document focused on strategies to reduce GHG emissions; it did not address climate change adaptation, which is an important, but separate consideration.

Senate Bill 375- Senate Bill 375 is considered a landmark piece of legislation that aligns regional land use, transportation, housing, and greenhouse gas reduction planning efforts. The bill requires the ARB to set greenhouse gas emission reduction targets for light trucks and passenger vehicles for 2020 and 2035. The 18 Metropolitan Planning Organizations (MPOs) are responsible for preparing Sustainable Communities Strategies and, if needed, Alternative Planning Strategies (APS), that will include a region's respective strategy for meeting the established targets. An APS is an alternative strategy that must show how the region would, if implemented, meet the target if the SCS does not.

To develop the targets, SB 375 called for a Regional Targets Advisory Committee (RTAC), which included representatives from the MPOs, cities and counties, air districts, elected officials, the business community, nongovernmental organizations, and



experts in land use and transportation. The RTAC provided recommendations on the targets to ARB in a formal report in September, 2009. The report covers a range of important considerations in target setting and implementation. Target setting topics include: the use of empirical data and modeling; key underlying assumptions; best management practices; the base year, the metric, targets for 2020 and 2035; and both statewide and regional factors affecting transportation patterns. For implementation, the report considers housing and social equity issues; local government challenges in meeting the targets; funding and other support at the state and federal level;

and a variety of other important considerations. A complete copy of the report may be downloaded at: <http://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf>.

ARB staff released draft regional targets for 2020 for the four largest MPOs in June, 2010, along with placeholder targets for 2035. Placeholder targets were also issued for both 2020 and 2035 for MPOs in the San Joaquin Valley. An alternative approach to target setting was proposed for the remaining MPOs. As required by SB 375, ARB expects to formally adopt the final targets before the end of September, 2010.

Additional information about the target setting process can be found at: <http://www.arb.ca.gov/cc/sb375/sb375.htm>.

For the four largest MPOs, the draft 2020 targets are expressed as a percent reduction in emissions based on the potential reductions from land use and transportation planning scenarios provided by the MPOs, with a proposed range for the targets

between 5% and 10%⁴. This reduction excludes the expected emission reductions from Pavley GHG vehicle standards and low carbon fuel standard measures. Each of the four regions has its own placeholder targets for 2035, shown in Table 2-1, below.

Regional MPO	Draft GHG Reduction Target
Metropolitan Planning Commission (MTC)	3-12%
Sacramento Area Council of Governments (SACOG)	13-17%
San Diego Association of Governments (SANDAG)	5-19%
Southern California Association of Governments (SCAG)	3-12%

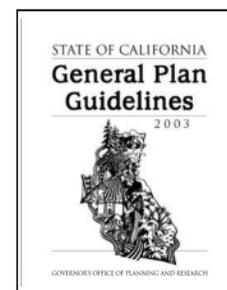
Source: ARB: "Draft Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375" page 4.

The placeholder targets for the MPOs in the San Joaquin Valley range from 1-7% for both 2020 and 2035. Placeholder targets were provided in lieu of draft targets to allow the MPOs to provide additional information for ARB to consider before finalizing the targets. For the remaining six MPOs, ARB proposes to use the most current per-capita GHG emissions data, adjusted for the impacts of the recession, as the basis for setting individual regional targets in those areas.

In addition to serving on the RTAC, local districts will support the MPOs as they develop their strategies to meet their regional targets, and local cities and counties as they incorporate sustainable strategies into their own planning efforts. Two of the contractors who developed the quantification methods in this Quantification Report also served on the RTAC, and every effort has been made to ensure that work here will ultimately be compatible with, and useful in, the implementation of SB 375.

General Plan Guidelines- The Governor's Office of Planning and Research (OPR) provides technical assistance on land use planning and CEQA matters to local governments. In this effort, OPR is required to adopt and periodically revise advisory guidelines to assist local governments in the preparation of local general plans. Commonly referred to as the General Plan Guidelines, the most current edition was released in 2003.

In the 2003 edition, OPR included an overview of the General Plan statutory requirements, a review of CEQA's role in the general plan process, implementation techniques, and the General Plan's relationship to other statutory planning requirements. The 2003 Guidelines do not specifically address GHG emissions or climate change.



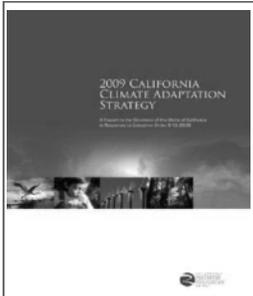
⁴ ARB: "Draft Regional Greenhouse Gas Emission Reduction Targets For Automobiles and Light Trucks Pursuant to Senate Bill 375," June, 2010; page 4.

It is important to note that the General Plan Guidelines are advisory, not mandatory. Nevertheless, it is the state's only official document explaining California's legal requirements for general plans. The General Plan Guidelines are continually shaped to reflect current trends, changes in applicable laws, and incorporate additional statutory requirements. This includes anticipated effects from AB 32 and SB 375.

An update to the 2003 General Plan Guidelines has been in development and includes a Climate Change Supplement. This update is expected to be finalized by the end of 2010.

Adaptation- Adaptation has not received the same attention that has been given to steps that might prevent or mitigate the extent of climate change, however it is a topic that should not be ignored in General Plans. The overwhelming body of scientific studies point to a certain amount of change in our climate that is inevitable, even if we are aggressive and diligent in our efforts to prevent it. Many regions of the state (indeed, the nation) are projected to see substantial impacts on agriculture, climate dependant business (such as recreation and tourism), infrastructure, and habitat. Coastal areas will see a rise in sea level, currently projected to be between one and three meters by 2100. Wild fires are expected to increase in number, size, and severity. Stresses on the environment, combined with extreme weather events, are projected to increase the incidence and severity of a number of infectious diseases and other medical conditions. These and myriad other changes pose tremendous risks to people and our way of life.

For that reason, in December, 2009, a team of California state agencies released a report: "The 2009 Climate Adaptation Strategy." In it, the team states that 2.5 trillion dollars' worth of infrastructure in California is at risk from the various projected climate-related changes in our environment. The estimated cost of addressing the impacts on that infrastructure is about \$3.9 billion, annually.⁵ The report identifies a number of



steps to be taken in the near term to appropriately plan for and address this threat. Highlights of the actions include: the formation of a Climate Adaptation Advisory Panel; new approaches to water management; revised land-use planning to avoid construction in highly vulnerable areas; evaluation of all state infrastructure projects to avoid exacerbating threats to infrastructure; and, more specific planning by emergency response agencies, public health agencies, and others to fortify existing communities and resources, and prepare for future stressors. For more information, the full report may be

downloaded at: <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>.

Quantification for Planning Purposes: Quantification of the impacts of measures for planning purposes is a different exercise than quantification for a specific project. By its

⁵ California Natural Resources Agency: "2009 Climate Adaptation Strategy" Dec. 2009; p. 5.

very nature, planning involves a future set of conditions about which less is known, and indeed knowable. The art and science of planning depend upon the interpretation of present conditions and trends, and the application of that interpretation to create a picture of future conditions. This document does not address detailed planning analysis in a comprehensive manner.

The majority of the measures described and quantified here are project-level measures; only a few are plan-level measures by design. That said, many of the project level measures are good examples of the implementation of planning-level policies that were described in the CAPCOA Model Policies report. The quantification of these measures will provide important and useful information for the planner to use in the context of quantifying anticipated effects in broader planning efforts.

In a planning context, it is especially important to be mindful of the interactions of different measures. A more detailed explanation is provided in Chapter 6, but the main concern is that certain measures do interact with each other, and their effects are not independent. This means that some measures will have little effect on their own, but in combination with other measures may have significant effect. The classic example of this is the bus shelter. A clean, well-lit, and comfortable bus shelter can enhance ridership on the buses stopping at that shelter and therefore reduce vehicle trips; but without the underlying bus service, the shelter itself does not reduce vehicle trips.

There are also instances where a measure is less effective in combination with other measures than it might be by itself. There are several reasons why this can occur. In some cases this happens because of a diminishing return for consecutive efforts. For example, there may be six good methods to increase ridership on a public transit line, any one of which might increase transit ridership by 20%. But implementing all of them will not necessarily increase ridership by 120%. In fact, for each successive method applied, it is likely that a lesser effect will be observed. Another example is where the measures are in some sense competing, as in a campaign to increase ridership on a commuter rail line at the same time that a new public transit bus line is established with overlapping service areas. Although the ridership campaign might be expected to cause 5% of drivers to switch to rail, some of those potential new riders might use the new bus service instead, making the ridership campaign less effective. At the same time, the new bus line might also be expected to reduce vehicle trips by 5%, but the actual reduction may be lower in reality if some of the ridership comes from those who would have been rail passengers and not from driving. Together, the ridership campaign for the rail line and the new bus line may only reduce vehicle trips by 7%, not the 10% predicted from the estimates of their independent effectiveness.⁶

These effects become more pronounced when considered in a city-wide, county-wide, or regional context. The interplay of land use decisions and transportation infrastructure development will be better assessed with more integrated computer modeling efforts. The quantification of some of the strategies at the individual, project level will provide

⁶ Please note that the effectiveness estimates provided here are only for the purposes of illustration and should not be taken as actual quantification of such measures.

insight into how useful and appropriate the strategies will be in the planning effort, however. More detailed discussion of how to quantify combinations of measures is provided in Chapter 6.

Reductions for Regulatory Compliance

There are three basic types of regulations for which emissions quantification is likely to be required: command-and-control regulations, permitting, and participation in a cap-and-trade program. A discussion of each is provided for information purposes, as is a discussion of quantification for mandatory emissions reporting regulations. The quantification methods in this document are intended primarily for use in project-level mitigation. Regulatory programs are likely to have specific requirements for monitoring, reporting, and quantification, which may or may not allow the use of the methods in this Report.

Command and Control Regulations: Some local air districts have command-and-control regulations for GHGs already on the books. These include limitations on the use of certain chemicals that are active in the atmosphere, performance requirements for landfill gas collection, and for systems that use GHGs with high Global Warming Potential, as well as efficiency standards for specific equipment or processes. Under the umbrella of the Scoping Plan, the ARB is also developing command-and-control regulations for a number of source categories. Regulations already adopted include standards for various GHGs that have a high global warming potential, such as sulfur hexafluoride (SF_6) used in the electricity sector, semiconductors, and other operations; perfluorocarbons in semiconductor manufacturing; certain refrigerants; and materials used in consumer products. There are also GHG emission limits on light-duty vehicles, rules for port drayage trucks and other heavy-duty vehicles, as well as landfill methane control requirements, and the Low Carbon Fuel Standard. Additional rulemaking is currently underway.



For these types of regulations, compliance may not rest upon quantification of emissions or emissions reductions. In many cases, installation of a specific technology, substitution of materials, or implementation of inspection and maintenance programs meets the requirements of the rule, and is presumed to have a certain effectiveness in reducing emissions from a baseline level. When a focused regulation does require quantification of emissions, it will generally specify a method for testing emissions, where appropriate, or for calculating emissions from other measured parameters.

A related, but more flexible type of regulation for emission reductions is an overall emissions cap for facilities or operations. Under this approach, sometimes referred to as a “bubble,” the regulation calls for an overall reduction in emissions from a specified baseline, but the operator has the discretion to decide how to achieve those reductions. This is different from a cap-and-trade program (see below), in that there is no trading

between facilities, or purchasing of credits to offset obligations. Because energy efficiency and other conservation projects are a likely strategy to meet a facility-wide GHG emission reduction requirement, the quantification of measures in this Report may be useful for compliance with such a cap. Of course, the caveats about assumptions and data inputs are also important here. Further, demonstration of compliance with this kind of limit will also involve verification of the emissions reductions, and is likely to include ongoing compliance tracking.

The regional targets of SB 375 are a type of emissions cap. It is important to note that the quantification presented in this Report may ultimately be useful in demonstrating reductions towards those targets. Although much of the work of implementing SB 375 will involve extensive land use and transportation modeling, the project level quantification in this Report may allow cities and counties to track their contribution towards their region's goal.

Permitting Programs: In addition to land-use permitting (discussed under “Project-level Mitigation” above), there may be requirements for operations to have permits to emit GHGs because GHGs are air pollutants. Federal air permitting requirements for stationary sources will become effective on January 1, 2011 (and will apply to applications that have not been acted upon prior to that date), under several federal permit programs, including Prevention of Significant Deterioration (PSD) and Title V. These programs are implemented by the local air districts. Applicability of these programs is based on annual potential to emit GHGs, with thresholds initially set between 75,000 and 100,000 tons per year, depending on the program, and decreasing over time, with final thresholds for smaller sources of GHG to be determined by a future federal rulemaking.

Because these permit programs are threshold-driven, quantification of emissions is an important element of compliance. At present, there is no specific federal guidance on quantifying GHG emissions pursuant to these programs, other than general guidelines for quantifying emissions of other regulated pollutants. This Quantification Report does not specifically address stationary source emissions, however some of the methods may be useful for certain elements of these programs, such as energy efficiency, water efficiency, and other associated measures of carbon use by a facility. The local air district with jurisdiction will be able to provide guidance on calculating emissions for a specific project, both for applicability and for compliance.

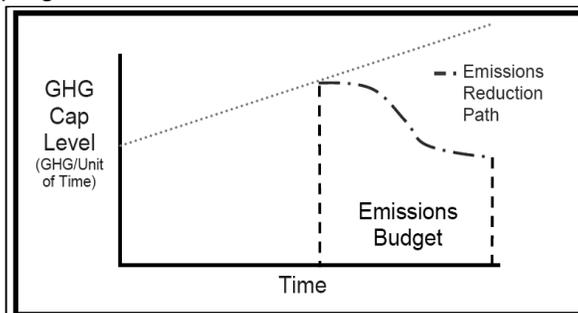
In addition, most permits require some form of verification, and ongoing demonstration on compliance. These obligations will be established as part of the permit.

Cap-and-Trade: A cap-and-trade program is a specific type of emissions trading program. Emissions trading in general is discussed in the next section. A brief explanation of cap-and-trade programs is provided below as background information for interested readers. It is not necessary to understand cap and trade programs, or emissions trading in general, in order to use the quantification methods in this report.

Further, these quantification methods were not developed specifically for the purposes of complying with cap and trade requirements, or for emissions trading more generally.

A cap-and-trade regulation establishes “allowances” for carbon emissions, expressed as CO₂ equivalents, usually in tons, or metric tons. An emitter of carbon must hold enough allowances to cover the amount of carbon it actually emits. Allowances are obtained on a carbon exchange, or market. In some cases they may be allocated by the government to emitters. There is a “cap” placed on the amount of allowances available in the market, and the cap declines over time. Carbon emitters must either reduce their emissions or purchase allowances from someone else; this is the “trade” part of the program. In this way, the program should cause carbon to be reduced wherever the reduction costs are lowest. The ARB is developing a cap-and-trade program which they currently expect will be considered for Board approval before the end of 2010. Information about the developing ARB program can be obtained from the conceptual drafts released by staff.

Legislation is also pending at the federal level that would establish cap-and-trade on a national scale, but the ultimate scope and content of the program is still unknown. The most recent ARB draft proposal may be downloaded at: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>.



From ARB materials for AB 32 Program Design Technical Stakeholder Working Group Meeting, April 25, 2008, Figure 1, page 3



Although compliance with a cap-and-trade program is not likely to be a reason for quantifying GHG reductions today, it is likely to be one in the future. When that time comes, there will be several important considerations in deciding whether to use this Quantification Report in meeting those obligations.

Mandatory Reporting: The ARB currently has a Mandatory Reporting Rule for specified stationary sources with GHG emissions greater than 25,000 metric tons of CO₂e per year. This rule was established pursuant to the requirements of AB 32, and was intended to provide information to support the development of the Scoping Plan and its implementing regulations. At the time the Mandatory Reporting Rule was approved by the ARB Board, staff indicated that the Rule was not intended, nor did it include the level of detail necessary, to implement the cap-and-trade program (which, at that time, was not yet proposed). Applicable quantification protocols will be developed and approved by the ARB Board as part of its cap-and-trade regulation, as will a revised Mandatory Reporting Rule. More information about the ARB’s Mandatory Reporting Rule may be obtained at <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>.

The U.S. EPA also has a Mandatory Reporting Rule. Under this rule, suppliers of fossil fuels or greenhouse gases that are used in industrial operations, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to EPA. The EPA rule does not currently specify quantification methods, and CAPCOA anticipates that any methods in this Report that would be applicable to affected reporters (e.g., building energy use) would be also be acceptable for use under the rule. Details on this rule can be found in 40 CFR Part 98, which was published in the Federal Register (www.regulations.gov) on October 30, 2009 under Docket ID No. EPA-HQ-OAR-2008-0508-2278.

Reductions for Credit

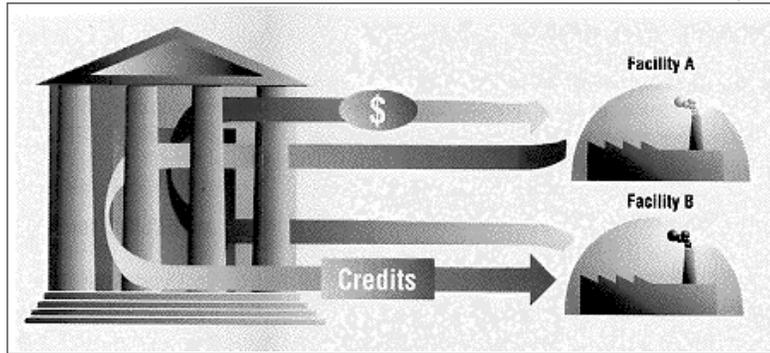
There are several different ways to formally award credit for emission reductions. Emission reduction credits are used when the opportunity, desire, obligation, and the resources to implement reductions are not aligned. Sometimes an entity has the desire and opportunity to reduce emissions, but not the resources. Sometimes an entity is required to make reductions but has no viable project opportunities. Or funds may be available to implement project, but willing participants are needed. Systems are used to match up projects, proponents, funding, and, in some cases, compliance obligations, and the basis of the systems is emission reduction credits.

Concurrent Offsite Mitigation Projects: The simplest form of credit for emission reductions occurs when someone needs to reduce emissions to mitigate impacts (for example, under CEQA), but does not have a good opportunity within his or her own operation or project; but if a good opportunity is available at another operation the person who needs the reductions can fund that project in exchange for being able to take credit for the reduction. A variant of this can occur when a list of emission reduction projects that could be used for mitigation is maintained, and those projects are matched with people who need to implement mitigation. The key in this arrangement is that the project is directly funded by the person who needs mitigation, at whatever the cost the mitigation project ultimately has. The emission reductions occur, but are not traded as an independent commodity. The person who needs the mitigation remains obligated to ensure that the project is implemented and the emission reductions occur.

Mitigation Funds: Instead of matching the person needing mitigation with a project that is then directly funded by that person, it is also possible to collect the funding and then create the projects. In this case, funds are paid into a mitigation fund at a pre-established rate, and the operator of the fund is then obligated to find and implement emission reduction projects. The rate is typically set at a level (for example in dollars per ton needed) that is sufficient to implement an actual project to produce the emission reductions, based on data about actual project costs. As with concurrent offsite mitigation projects, the emission reductions here are not traded as an independent commodity, however a default rate is established. Under a mitigation fund, then, the person needing mitigation is considered to have provided it (that is, given "credit" for the reductions) at the point of paying into the mitigation fund. The obligation to ensure the emission reductions occur is transferred to the fund operator.

Emissions Trading: Emissions trading is a transaction that occurs between entities that make emission reductions which they don't need, and entities that desire emissions reductions but, for whatever reason, do not choose to make them. The emissions (or, more accurately, "credits" for the emission reductions) are treated as a commodity with independent value. The transaction occurs in some form of market,

such as transactions occur between the grower of produce and the consumer in a local farmers market. The transaction, or trade, happens when a consumer believes that the product is worth the price being asked for it.



The obligation to ensure the emission reductions occur generally rests with the person selling the credits, and (to the extent an independent review has occurred) with whomever grants certification to the reduction project.

As explained above, a cap-and-trade program is a type of GHG trading market, but there are other types of emissions trading markets. An open GHG credit-based trading market does not have a cap, and participation is on a voluntary basis. In a credit-based market, credits are awarded for emission reductions, and may be purchased and sold as a commodity on an exchange. The credits are sometimes referred to as offsets, and they are generally tracked as tons, or metric tons, of pollutant reduced; in the case of GHGs, this is typically in the form of CO₂e. The important distinction between an open market and a cap-and-trade system is that the creation, buying, and selling of offsets is not restricted in an open market.

The following key terms and concepts are discussed to help the interested reader understand how credits are used in a trading market. It is not necessary to understand trading markets in order to use the quantification methods in this report, and the reader may proceed directly to Chapter 3.

Regulators and Exchanges: Some emissions trading markets are run by the government, while others are operated by independent, non-governmental entities. In government-run markets, such as the Regional Clean Air Incentives Market (RECLAIM) developed and administered by the South Coast Air Quality Management District, and U.S. EPA's Acid Rain program, a government agency establishes and implements the trading market. These markets are typically regulatory in nature, rather than voluntary, although some voluntary participation may be allowed. The Regional Greenhouse Gas Initiative (RGGI) implemented by ten Northeast and Mid-Atlantic states, and the

European Union Emission Trading Scheme (EU ETS) are other examples of regulatory markets.

Independent exchanges, such as the California Climate Action Registry (CCAR) and the Climate Registry (TCR), were established as independent, non-governmental operations. They offer a forum for entities to have emission reductions certified for credit, and for those credits to be bought and sold. These bodies develop their own structure and rules for participation. The nature of those rules determines the quality of the credits available on the exchange. Participation in the exchange is voluntary.

Standards for Credits: In order to be acceptable for credit under the AB 32 program, GHG emission reductions must be real, permanent, quantifiable, verifiable, enforceable, and additional. Historically, the federal Clean Air Act (CAA, or Act) has required emission reduction credits to be: real, permanent, quantifiable, enforceable, and surplus⁷. In this context, surplus means the reductions are not required by any law, regulation, permit condition, or other enforceable mechanism under the Act. California continued this concept in AB 32, requiring that any regulation adopted pursuant to AB 32 ensure that GHG reductions are “real, permanent, quantifiable, verifiable, and enforceable.”⁸

The term “additional” comes from the Clean Development Mechanism in the Kyoto Protocol; it is essentially the same as “surplus” except that it is not restricted to any particular statute, and means that you cannot receive credit for any reductions that you were otherwise obligated to make. AB 32 requires its implementing regulations that include market-based compliance mechanisms to ensure that reductions are “in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that might otherwise occur.”⁹

Protocols: Transactions to purchase emission reductions depend on the confidence the purchaser has in the value of reductions being purchased. Price is part of the concept of value that we can easily understand. The other, less tangible part of the concept of value is the quality of the emission reductions themselves. This is harder to understand because, unlike the produce at the farmer’s market, we can’t examine the product to determine its value. Not only are emission reductions invisible, they actually *didn’t happen*. So to have confidence in their value, we need a reliable and accurate picture of what *would have happened*, as well as what *actually happened*.

Protocols are the formalized procedures for accounting for credits that ensure the credits are an accurate and reliable representation of emission reductions that actually occurred. Some protocols focus only on quantification of the reductions, while others also address documentation and verification. They can be developed and adopted by regulatory bodies, by the operators of exchanges, or by subject area experts. Some markets will require participants to use a specific protocol or set of protocols. Others

⁷ 40 CFR Sections 51.493 and 51.852

⁸ California HS&C: Section 35862(d)(1)

⁹ Ibid, Section 35862(d)(2)

will allow participants to propose a protocol for developing and quantifying reductions. Failure to follow required protocols may prevent the project from receiving credit.

Holding and Using Credits: When credits are awarded for emission reduction projects, the owner of the credits is generally given a certificate of value. In this case, “value” means the corresponding emission reductions, not the price, which is determined by the market. The credits are registered with a bank where they are kept until the owner of the credits uses or sells them.

Credit Banks: Emission credit banks are similar to savings banks where money is deposited. The bank tracks credits, credit value, credit price, and transactions. It compiles data and issues reports. Banks are subject to accounting standards and requirements for transparency. It is important to note that not all credits can be banked. Credits or allowances that have a finite life do not retain their value beyond their life term.

Credit Life: Credits may have a specified life (for example, one year), or they may be permanent. The life of the credit may be dictated either by the nature of the reductions that generated it, or by the program in which it is being used. As discussed above, in California, AB 32 requires reductions for regulatory compliance to be permanent. In other markets, such as Kyoto’s Clean Development Mechanism, there are both long term and short term credits.

Discounting Credit Value: Some regulatory structures require that credits be discounted, that is, the emission reduction value of the credit (not the price) is reduced to account for certain factors, or to enhance the liquidity of the market. In some cases, a portion of the credit value is surrendered or retired in the interest of environmental policy goals.

Offset Ratios: Offset ratios are a way to ensure an adequate margin of safety when credits are provided to offset impacts. A program may require that the amount of credits provided is greater than the anticipated emissions increases. If the program requires 10% extra credits, then the offset ratio is said to be “1.1 to 1.”

The above discussion of emission reduction credits and trading is provided for information only, and should not be construed as endorsement of, or recommendation for, the use of credits or trading for the purposes of meeting GHG reduction obligations. CAPCOA does not make policy recommendations regarding credits or trading in this Report. Decisions about whether to allow the use of credits rests solely with the agency with jurisdiction over a project or program.

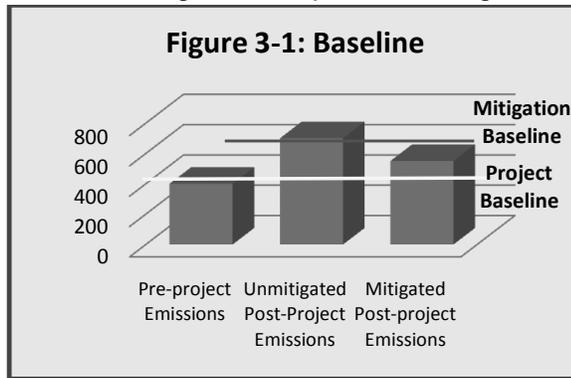
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Chapter 3: Quantification Concepts

This chapter provides an overview of some key concepts that arise in considering quantification of GHG emission reduction projects. This discussion is provided so the reader understands the context in which these terms are used throughout this document. Here again, this discussion is not intended to endorse any policy position, nor does it provide any recommendations on thresholds of significance for GHG emissions. Policy decisions are left to individual agencies and their governing boards.

Baseline

An emissions baseline is the foundation of any estimate of the impacts of a project or of a mitigation measure. In its simplest form, it reflects the current level of emissions if those emissions do not vary. Usually, however, emissions do vary, typically because the activities or operations that cause the emissions change. Traffic patterns change with the time of day, ski areas are busiest in the winter, air conditioners run more in the summer, people drive less when fuel prices rise, and production of goods changes with the economy. To set a baseline, it is important to understand what factors affect the activity or operation in a way that will alter its emissions; then, the most appropriate scenario is selected and the emissions are adjusted to account for that scenario. Figure 3-1: Baseline illustrates the concept of baselines in project analysis.



Regulatory programs that require calculation of emissions baselines generally specify the basis for the calculation. For example, a baseline scenario could be a three year average of actual emissions, or the worst case, or, as in CEQA, the program may call for an analysis to identify a representative set of conditions based on historical data.

In its proposed draft regulation for cap-and-trade, ARB defines baseline to mean “the scenario that reflects a conservative estimate of the business-as-usual performance or activities for the relevant type of activity or practice such that the baseline provides an adequate margin of safety to reasonably calculate the amount of GHG reductions in reference to such baseline.”¹

For this Quantification Report, CAPCOA selected a baseline period to correspond to the average GHG emissions from 2002 to 2004, inclusive. This is the emissions baseline period used by ARB in its Scoping Plan². The baseline conditions used to quantify the

¹ ARB: “Preliminary Draft Regulation for a California Cap-and-Trade Program,” Section 95802 (a)(2), Dec., 2009; page 5.

² ARB: “Climate Change Scoping Plan: a framework for change,” Dec., 2008; page 11.

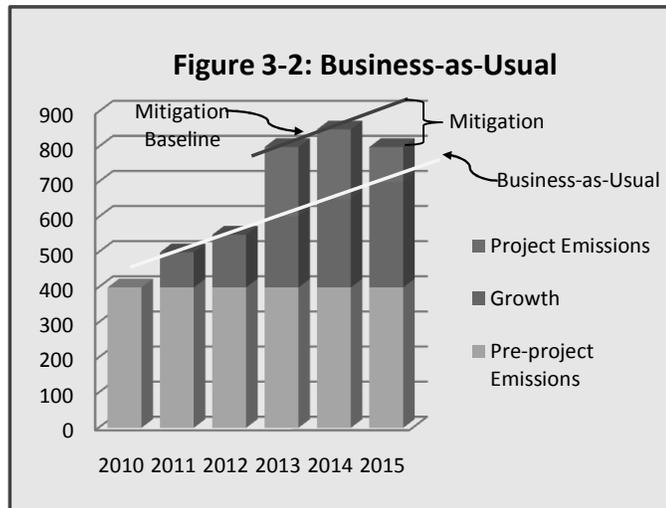
effectiveness of mitigation measures for this Quantification Report reflect the conditions that formed the basis for ARB’s 2007 inventory of economic activity and GHG emissions. Those conditions and the associated quantification methods are explained in Appendix B to this Report. A copy of ARB’s Scoping Plan may be downloaded at: <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>.

There may be circumstances in which a different set of baseline conditions is more appropriate. If a user wishes to adjust the baseline, CAPCOA recommends using the methods provided in the measure Fact Sheet, and in Appendix B, but substituting data inputs that better reflect the baseline conditions for the project under consideration. This ensures consistent methods are used so the comparison of baseline to project is an “apples-to-apples” comparison. So, for example, a user outside of California would substitute an emission factor for electricity generation that better represents the generation mix that is provided in the user’s region. This alternative factor would be used in the baseline methods where electricity generation is part of the calculation, and would also be used in the quantification of emissions associated with the project.

It may also be appropriate to adjust the baseline conditions on a temporal basis if needed to account for changes over time. The ARB revises its emissions inventory information on a periodic basis. The most current inventory information was published in May of 2010, and covers the time period from 2000 to 2008. The information is available by category, with trends analysis, and with full documentation of data sources and methods. The updated emissions inventory information is available at: <http://www.arb.ca.gov/cc/inventory/data/data.htm>.

Business-as-Usual Scenario

Not all baseline conditions occur in the present. In some cases, the baseline is a forecast of the conditions that are expected to exist at some time in the future, in the absence of interventions to change those future conditions. The forecasted baseline conditions are referred to as “business-as-usual” and are intended to reflect normal operation. For example, a town might currently have 20,000 residents, and be on a course to add another 5,000 residents in low-density, planned development at the perimeter of its existing footprint over the next 10 years. The town could add an urban growth boundary that would change that anticipated development. In order to quantify the effect of adding the urban growth boundary, the business-as-usual growth scenario must first be calculated; that will form



the baseline to compare to the growth scenario with the adopted boundary. Figure 3-2 illustrates the application of the “business-as-usual” concept to a project.

ARB defines business-as-usual to mean, “the normal course of business or activities for an entity or a project before the imposition of greenhouse gas emission reduction requirements or incentives.”³

Mitigation Types

There are four general ways to create emission reductions for mitigation projects: (1) the operation or activity can be avoided so that emissions are not created in the first place; (2) the operation or activity can be changed so that it creates fewer emissions; (3) emission control technology can be added to the activity or operation that prevents the release of emissions that are created; and (4) emissions that have been released can be sequestered in the environment. Each of these is discussed below.

Avoided Emissions: When someone chooses to walk to the grocery store in lieu of driving, or turn off the lights, energy isn’t needed to power the car or lights, and the emissions associated with that energy don’t occur. In the case of walking instead of driving, the avoided emissions include the CO₂ and other pollutants that would have come from the tailpipe of the car. These are “direct” emissions that are being avoided, and they can be readily quantified to show the benefit associated with walking. When electricity isn’t needed, it isn’t generated; the avoided emissions are the CO₂ and other pollutants that are not emitted by the power plant. Because the emissions are not directly emitted where the light is being used, this type of emissions are referred to as “indirect” emissions; even though they are indirect, they can still be quantified to show the benefit of turning off the



lights. There can be other benefits associated with avoided emissions as well. When you consider the walking scenario in a lifecycle sense, the avoided emissions can also include the energy that would have been used to extract, refine, transport, and dispense the fuel. The same is true when you use a reusable cloth bag instead of a disposable plastic bag to carry your purchases; energy is needed to extract and refine the petroleum that goes into the bag, to make and transport the bag, and then to dispose of the bag after it is used. These kinds of avoided emissions are much more difficult to fully quantify, however, and will not be included in the quantification approaches in this document. Even if we aren’t quantifying the benefits, however, it is important to understand that avoided emissions can have positive effects both upstream and downstream, creating a ripple effect of further avoided emissions.

³ ARB: “Preliminary Draft Regulation for a California Cap-and-Trade Program,” Section 95802 (a)(18), Dec., 2009; page 7.

Fewer Created Emissions: If the activity or operation can't be avoided, sometimes it can be accomplished in a way that creates fewer emissions. This is usually associated with increased efficiency. So, for example, if walking to the store isn't an option, someone could choose to drive there in a more efficient vehicle, like a gas-electric hybrid powered car. The engine in the hybrid is able to drive more miles with less fuel consumed. Less fuel consumed equates to fewer emissions at the tailpipe. In the lighting example, using a more efficient light bulb is one way to reduce the indirect emissions, but a more efficient power plant would also do this.



Controlled Emissions: Once emissions are created, they are either released to the environment, or they are controlled with technology that captures and stores or destroys them. In the car example, the addition of a catalytic converter allows the tailpipe emissions to be collected after they are created, and destroyed before they are released. Note that the efficiency of the engine (discussed above), and the control of emissions after they leave it, are two distinct ways to reduce emissions. There are also emissions control technologies for power plants.



Sequestration of Emissions: Carbon emissions are "sequestered" by embedding the carbon in structure that will hold the emissions and keep them out of the atmosphere. Sequestration happens through biological, chemical, or physical processes.

Biological Sequestration: Trees and other vegetation biologically absorb carbon from the atmosphere and incorporate it into their biomass; the carbon becomes the solid form of the growing tree or plant. Many sequestration projects involve the planting of trees or vegetation to improve the uptake of carbon from the atmosphere. Enhanced farming practices may also achieve some sequestration through the use of CO₂ absorbing cover crops, improved grazing practices, and restoration of depleted land. Increased peat production in peat bogs is also method to biologically sequester carbon.



Chemical Sequestration: Oceans absorb CO₂, and it causes the oceans to become more acidic (which is detrimental to coral reefs and other sea life). Other chemical processes include reacting CO₂ through a process called mineral carbonation to form stable carbonate minerals that are normally found in the earth's crust.

Physical Sequestration: CO₂ can also be physically contained in a way that prevents its release to the atmosphere. This can involve injecting it deep into the ground, for example into depleted oil and gas reservoirs. It can also be injected into oil wells to push up the oil. Another approach is to embed it in cement through a newly developed process that causes cement to absorb CO₂ from the atmosphere while it is curing.

Measure or Project Scope

Just as good quantification requires careful and transparent consideration of the baseline or business-as-usual scenario, it also requires a complete and detailed characterization of the measure or project being undertaken. This is important because considerations of what is included in, and what is excluded from, the analysis can have a significant impact on results of the quantification.

Determining the appropriate scope for the analysis of a project or measure is not always as simple as it might appear. Take for example the installation of solar panels in a remote desert region that receives a lot of sun. The panels generate electricity without releasing GHG emissions, which offset more traditional generation of electricity that does emit GHGs. But the desert region may be prone to dust or sand storms, which would quickly obscure the glass panels and decrease their effectiveness. This decrease could be minimized if the panels were cleaned regularly. But the cleaning will require vehicles to come to the site, which takes energy and releases GHGs, and the cleaning activity itself may do so as well. If the site is truly remote, the emissions from those vehicle trips could be large. But what if there is another installation nearby: can the trip-related emissions be considered only in addition to those for the other site? Do you have to know if the cleaning for both sites can be accomplished in one trip? And what about the energy and materials needed to make the solar panels?

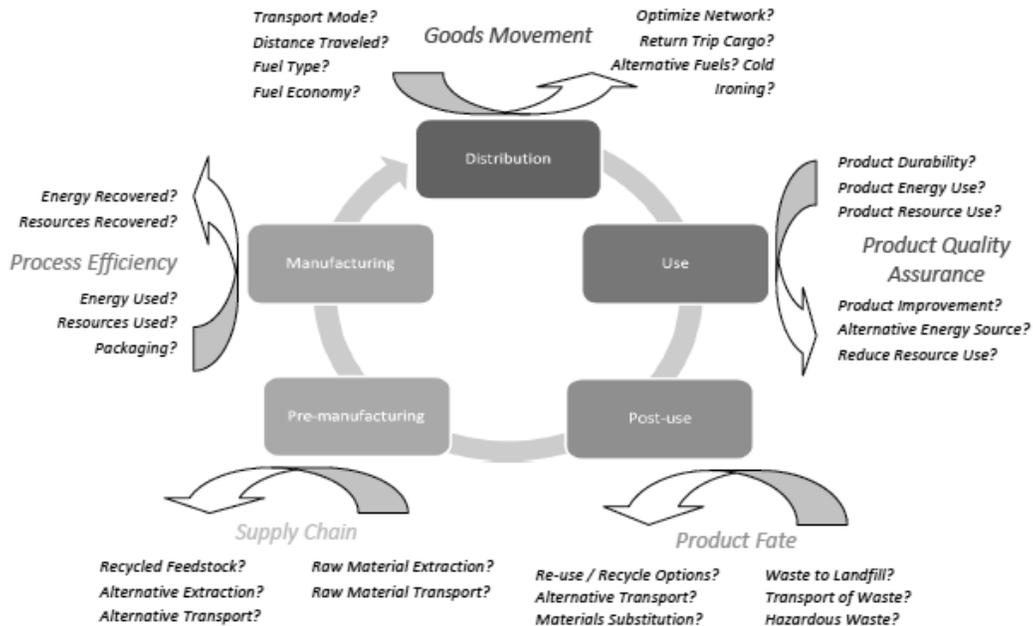
The methods in this Report generally include those reductions over which a project proponent can exercise direct control, as well as indirect emissions associated with electrical generation and the use of natural gas. CAPCOA does not include analysis of full lifecycle emissions in this Report, because of the complexity of the analysis involved and the lack of general standards for incorporating such considerations.

Lifecycle Analysis

Energy and materials are involved in the creation, processing, transport, and disposal of all of the products we use, from the tomatoes on our salads, to the computers we work with, the vehicles we drive (even if they are zero-emission vehicles), and the roadways we travel over. A lifecycle analysis attempts to identify and quantify the GHG emissions associated the energy and materials used at all stages of the product's life, from the gathering of raw materials, through the growing or fabrication, distribution, use, and the ultimate disposal at the end of the product's useful life.

This is a difficult and complicated undertaking; it is challenging to identify all of the inputs that are both necessary and meaningful for this sort of analysis. Even if the inputs can be identified, good data are not readily available to quantify emissions in most cases. Further, there is not yet agreement on methodological approaches to lifecycle analysis for most sectors (Figure 3-3: Lifecycle Analysis shows a basic schematic of some of these considerations.). For these reasons, as stated under the discussion of scope, above, CAPCOA does not include lifecycle analysis in this Report.

Figure 3-3: Lifecycle Analysis



Unfortunately, there are important mitigation projects or measures that cannot be quantified without a lifecycle analysis, and some of them are measures that are highly desirable or commonly encouraged. One example is the recycling and reuse of construction materials; it is intuitively obvious that recycling and reuse avoids both the embedded energy costs in the new material, as well as the energy and emissions associated with disposal. Another example is the push for reusable cloth grocery bags instead of disposable plastic ones, or reusable water bottles filled with tap water instead of disposable bottled water. For some of these measures, it is possible to do a limited lifecycle analysis, if the project scope is well defined and if the data are available. The Report provides a discussion of how to pursue an analysis in such cases, but otherwise identifies these kinds of measures as Best Management Practices.

It is important to note that Appendix F to the CEQA Guidelines Amendments approved in December of 2009 specifically state that a lead agency is not required to perform a project-level energy life-cycle analysis⁴. Because direct GHG emissions from electrical generation, and GHG emissions from electricity associated with water use (as well as other direct emissions associated with water treatment) are well defined and can be

⁴ California Natural Resources Agency: Adopted Text of the CEQA Guidelines Amendments (Adopted December 30, 2009, Effective March 18, 2010), Appendix F.

accurately quantified, they are not considered to “lifecycle emissions” for the purposes of this Report, and they are included in these quantification methods.

Accuracy and Reliability

In an effort to standardize the creation of GHG inventories, and improve the quality of the information, the IPCC defines “good practice” for GHG emissions quantifications as those that “contain neither over- nor under-estimates so far as can be judged, and in which uncertainties are reduced as far as practicable.”⁵

Part of the challenge in developing methods that meet this standard of good practice is assuring the accuracy of the methods. CAPCOA uses accuracy to mean the closeness of the agreement between the result of a measurement or calculation, and the true value, or a generally accepted reference value. When a method is accurate, it will, for a particular case, produce a quantification of emissions that is as close to the actual emissions as can practicably be done with information that is reasonably available.

To meet the good practice standard, the quantification methods must also be reliable, which is different from being accurate. A reliable method will yield accurate results across a range of different cases, not only in one particular case.

To some extent, the accuracy of the quantification is sacrificed to achieve reliability. This is because a method that can be applied across a range of scenarios must be generalized to some extent. So, for example, the transportation analyses do not, for the most part, differentiate between peak and off-peak vehicle trips, even though off-peak trips will have a lower emission impact because of the effects of congestion on travel time and engine performance. In order to fully address all of the factors that impact the emissions associated with vehicle trips in a specific project, a far more detailed and costly analysis would be needed, and it would not be readily applied to other situations. The methods contained in this Report have been developed to provide the best balance between accuracy and reliability, bearing in mind that ease of use is also important.

In order to ensure both the accuracy and the reliability of the quantification methods in this Report, each method is accompanied by a discussion of the assumptions and limitations of the method. Where either the assumptions are not met, or the limitations are exceeded, the method will not be accurate, and the error can be very large. Further, if the conditions of the project differ from the assumptions and limitations of the method, the quantification may no longer be applicable. It is possible to look at the underlying assumptions and calculation and make adjustments to the method so that it better reflects the conditions of a specific project. Doing this may preserve the accuracy to some extent, but the user is responsible for determining how best to accomplish this, and the reviewing agency will decide whether the results are still acceptable.

⁵ IPCC 2006, “2006 IPCC Guidelines for National Greenhouse Gas Inventories,” Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan. Page 1.6.

Additionality

In order for a project or measure that reduces emissions to count as mitigation of impacts, the reductions have to be “additional.” Greenhouse gas emission reductions that are otherwise required by law or regulation would appropriately be considered part of the existing baseline. Thus, any resulting emission reduction cannot be construed as appropriate (or additional) for purposes of mitigation under CEQA. For example, in the draft regulation for cap-and-trade, ARB specifies that in order to be eligible for offset credit, “emission reductions must be in addition to any greenhouse gas reduction, avoidance or sequestration otherwise required by law or regulation, or any greenhouse gas reduction, avoidance or sequestration that would otherwise occur.”⁶ What this means in practice is that if there is a rule that requires, for example, increased energy efficiency in a new building, the project proponent cannot count that increased efficiency as a mitigation or credit unless the project goes beyond what the rule requires; and in that case, only the efficiency that is in excess of what is required can be counted. It also means that if there is a rule that requires a boiler to be replaced with one that releases fewer smog-forming pollutants, and the new boiler is more efficient and also releases less CO₂, the reduced CO₂ can’t be counted as mitigation or credit, because the reductions were going to happen anyway. But if the boiler were replaced with a solar-powered water heater, the difference in emissions between a typical new boiler and the solar water heater could be counted.

From a practical standpoint, any reductions that are *not* additional have to be either included in the baseline or subtracted from the project, whichever is more appropriate. In preparing this Report, CAPCOA made determinations about requirements to include in or exclude from the baseline. A more complete discussion of those determinations is included in Appendix B.

Verification

Verification is the process by which we demonstrate that the emission reductions we have quantified for a project actually occurred. While not important for purely voluntary projects, verification in some form is a necessary step in most other circumstances. Verification is an important component in establishing the value of reductions that are made. It allows others to have confidence in the quality of the reductions. If the reductions are being made to satisfy an obligation to mitigate impacts, the agency with jurisdiction should be consulted to determine what standard of verification is needed. In some cases, independent, third-party verification is required. Not all regulatory programs specify third-party verification, however. For example, the U.S. EPA’s Mandatory Reporting Rule relies instead on routine compliance verification through a permit system.

⁶ ARB: “Preliminary Draft Regulation for a California Cap-and-Trade Program,” Section 95802 (a)(4), Dec., 2009; page 6.

Chapter 4: Quantification Approaches & Methods

This chapter of the Report provides an explanation of how the quantification methods were developed, and the limitations of the sources used. There is also an overview of the presentation of the quantification methods in the Report. Finally this section discusses the limitations of the methods themselves, and how these limitations should be considered when applying the methods to actual mitigation projects.

General Emission Quantification Approach

The emission quantification methods in this Report are designed to provide GHG estimates using readily available, user-specified information for a source or activity. In general, GHG emissions associated with a given source or activity are estimated using data for a physical quantity or metric, on the underlying assumption that CO₂ emissions are directly proportional to that metric. For example, emissions related to vehicles are estimated using vehicle trips and mileage data. For sources of indirect emissions such as buildings, swimming pools, municipal lighting and water distribution, the metric is energy use as electricity or natural gas¹. When site-specific energy use data are not available, energy use can be estimated using a physical metric such as the volume of water supplied, the size of building, and the number of lamps.

For each source metric there are emission factors that quantify the amount of emissions released as a result of the source or activity. These emission factors have been developed by various governmental agencies, public utilities and other entities through data analysis and numerical models. The factors are based on certain assumptions that define the typical or “baseline” emissions scenario. For example, emission factors for vehicles assume a particular type of fuel and driving speed, and emission factors for electricity use assume a certain mix of electricity generating methods.

Individual GHGs are converted to carbon dioxide equivalent units by multiplying values by their global warming potential (GWP). The GWP values used in this report are based on the IPCC Second Assessment Report (SAR, 1996), even though more recent (and slightly different) GWP values were developed in the IPCC’s Third Assessment Report (TAR, 2001) and Fourth Assessment Report (FAR, 2007). The values in the SAR were used in this Report because they are still used by international convention.

The general equation for emissions quantification is shown below for each GHG:

$$\text{GHG Emissions} = [\text{source metric}] \times [\text{emission factor}] \times [\text{GWP}]$$

Then, all GHGs are summed from an individual source.

$$\text{GHG Emissions}_{\text{total}} = \sum_{n=1}^i [\text{GHG Emissions}]_n$$

¹ Note that emissions from natural gas use are not always indirect in nature. For more discussion of direct and indirect emissions and types of mitigation, please see Chapter 3.

Where “source metric” and “emission factor” are defined as follows:

Source Metric: The “source metric” is the unit of measure of the source of the emissions. For example, for transportation sources, the metric is vehicle miles traveled; for building energy use, it is “energy intensity”, that is, the energy demand per square foot of building space. Mitigation measures that involve source reduction are measures that reduce the source metric. This can include for example, reducing the miles traveled by a vehicle because the reduction in miles traveled will reduce the emissions generated from vehicle travel. Similarly, a reduction in dwelling unit electricity use by installing energy efficient appliances and lighting will reduce the emissions associated with total electricity assigned to dwelling units.

Emissions associated with source reduction measures are generally avoided emissions. As discussed in Chapter 3, there are often additional benefits to these kinds of reductions. Source reduction promotes efficient use and management of resources and utilities, in addition to avoiding emissions. Thus, source reduction can also result in a decreased need for downstream emissions control. From a quantification standpoint, for this type of measure, it is the “source metric” in the basic emissions equation (above) that changes.

Emission Factor: The “emission factor” is the rate at which emissions are generated per unit of source metric (see above). Reductions in the emission factor happen when fewer emissions are generated per unit of source metric, for example, a decrease in the amount emissions that are released per kilowatt hour, per gallon of water, etc. Such a decrease may apply if a carbon-neutral electricity source (e.g. from photovoltaics) is used in place of grid electricity, which has higher associated emissions; or if electricity is used instead of combustion fuel, such as with electric cars. Reductions can also occur if a fuel with lower GHG emissions is used in the place of one with higher GHG emissions. From a quantification standpoint, for this type of measure, it is the “emission factor” in the equation that changes.

For both kinds of measures, mitigated emissions are calculated using the same general equation, but the emissions will change based on whether the values change for the source metric or the emission factor. Several mitigation measures may apply to the same source, changing both the source metric and the emission factor, and the estimation of the overall impact of simultaneous measures must be carefully evaluated. In some cases the reductions are additive, but in others they must be evaluated sequentially. Other sets of mitigation measures may require additional analysis to avoid double-counting. Furthermore, not all types of mitigation measures will be feasible in all situations. Chapter 6 provides a detailed discussion of considerations in quantifying the combination of mitigation measures, as well as a set of rules to guard against over-estimation of reductions.

Quantification of Baseline Emissions

In order to ensure that similar assumptions and methodologies are being used to quantify both the baseline and project emissions, a consistent set of methodologies for determining the GHG emission baseline emissions was defined. This was the first step in establishing quantitative methods for assessing GHG mitigation reductions. The results of this effort are contained in Appendix B and should be utilized or considered when establishing baseline emission levels. This same set of methodologies was used to develop the quantification methods for each mitigation measure.

Quantification of Emission Reductions for Mitigation Measures

There is a wide array of mitigation measures that could reduce direct or indirect GHG emissions for a project; however, not all of them can be readily quantified with the information and tools currently available. Other measures may be individually quantifiable, but the quantification cannot be reliably extrapolated to other similar projects. The goal in developing this Quantification Report was to provide accurate and reliable methods that can be easily applied across a range of projects and settings. This section explains how the list of measures included in this guidance was developed, and how the measures are presented.

Screening of Mitigation Measures: An initial list of candidate measures was developed with about 75 types of greenhouse gas mitigation measures related to site design, land use, building components, parking measures, energy, solid waste management, etc. These were identified because they were commonly seen in land use permit applications or were measures that air districts have been frequently asked for guidance on. A literature review was done to identify potential additional measures.

Measures from this compiled list were screened based on the following criteria:

- Relevance to project-level CEQA analysis;
- Availability of empirical evidence or reliable research to credibly establish baselines and level of effectiveness; and
- Non-negligible level of effectiveness determined by credible research.

Measures or grouped measures that did not meet all three of these criteria were evaluated for the possibility of grouping measures with synergistic effects or describing as a Best Management Practice (BMP). Where measures were determined to be BMPs, the Report describes the relevant literature and, where applicable, provides methods that could be used if substantial evidence is available to support the reduction effectiveness. In addition some measures had substantial evidence of reductions when implemented at a general Plan (GP) level rather than a project level. These measures were retained as applicable for General Plans, only. Local Agencies may decide to provide incentives or allocate the General Plan level reductions to specific projects by

weighting the overall effect by the number of projects to which the General Plan reduction would apply.

Information Sources and Their Limitations: The quantified effect that different mitigation measures have on source quantities or emission intensities must be based on substantial evidence and should be enforceable (to ensure that the commitments are adhered to) and verifiable (to confirm that the mitigation measures were implemented).

Examples of credible sources for supporting evidence include government agency-sponsored studies, peer-reviewed scientific literature, case studies, government-approved modeling software and widely adopted protocols. In order for the supporting evidence or data for a given mitigation measure to be deemed applicable, it must be based on similar or scalable assumptions and conditions in terms of period of study, physical scale, site-specific parameters, operating conditions, technology, population type, etc.

There are uncertainties associated with any type of estimation method. Some of these methods attempt to predict future behavior with respect to water and energy use using historical data and trends, which may not accurately reflect changes in behavior due to increasing awareness of resource conservation. Despite these uncertainties, the methods presented in Chapter 7 provide the best available estimations of GHG emissions and are therefore suitable for the project-level inventories.

Enforceable Reductions: As discussed in Chapter 2, emission reductions (whether as mitigation under CEQA, for regulatory purposes, or for trading) have to be enforceable. For that reason, in this Report the quantity of reductions or applicability of mitigation measures is limited to elements which the project proponent can control. Additional reductions in GHG emissions may be feasible in the broader sense and may occur; however, because the project proponent does not have control over these elements, those other reductions are not considered in the quantification methods here.

For instance, in the context of a building project, source reductions that rely on individual occupant behavior are generally not enforceable by the builder. A residential dwelling, when occupied, will contain a variety of electrical appliances. An individual occupant may decide to purchase energy efficient appliances and would therefore reduce energy use. This reduction in energy use is not enforceable, however, because the project proponent can't dictate individual occupants' purchases; these types of reductions are not counted in the methods in this Report. There may be some instances, however, where the project proponent is the occupant and would have the ability to enforce behavior. In these instances additional emission reductions not quantified in this document may be feasible and enforceable.

Some reductions in emissions are not enforceable when voluntary, but become enforceable when implemented as part of a regulatory scheme. Once regulations that result in emissions reductions are enacted, the project should be reviewed to determine

how the requirements affect the baseline, and the reductions that can be quantified for mitigation credit.

When the emission reductions from a project are not enforceable, and therefore not quantified under these protocols, they may still have value for mitigation purposes and a qualitative analysis should be considered. Decisions about whether such reductions will be considered, and what sort of qualitative analysis is appropriate, are the responsibility of the agency reviewing the project.

Creation of Mitigation Measure Fact Sheets: Once the list of mitigation measures was determined, detailed Fact Sheets were developed for each mitigation measure. Each fact sheet presents a summary of the measure's applicability; the required calculation inputs from the actual project; the baseline emissions method; the mitigation calculation method and associated assumptions; a discussion of the calculation and an example calculation; and finally a summary of the preferred and alternative literature sources for measure efficacy. The fact sheets begin with a measure description. This description includes two critical components: (1) specific language regarding the measure implementation (which should be consistent with the implementation method for the actual project), and (2) a discussion of key support strategies that are assumed to also be in place for the reported range of effectiveness. Chapter 6 provides a discussion of the Fact Sheets and a brief description of their intended use. The Fact Sheets themselves are included in Chapter 7.

Quantification Methods

In this Report, emissions reductions are presented in terms of percentage reductions. For mitigation measures where the source metric is reduced, reductions were generally assessed based on a ratio comparison of a common "denominator" source metric for each source category in order to assist in the quantification of strategy impacts:

- Building Energy Use will utilize natural gas and electricity use.
- Water will utilize outdoor and indoor water use.
- Solid waste will utilize waste disposed.
- Mobile sources will utilize changes in vehicle miles travelled (VMT).

For mitigation measures involving emission factor reductions, a ratio comparing the mitigated and baseline emissions factor is utilized to quantify the emission reductions.

Because a ratio comparison is utilized, in most cases the reductions quantified for GHGs will also be the same reduction assessed for criteria pollutants and toxic air contaminants provided the reduction in emission factors also occurs for the other types of pollutants. This is not always the case and in some cases a reduction for one pollutant may result in an increase for another pollutant.

There is one exception to the quantitative approach described above, for off-road and on-road vehicles that affects the quantification of the emissions of ROG. The

underlying data and methods available to quantify these emissions were limited to running emissions (that is, emissions from the tailpipe while the engine is running). There are also evaporative emissions, however, which occur when pollutants evaporate from the fuel in the fuel tank and escape to the atmosphere. The evaporative emissions of most pollutants are very small when compared to the running emissions, but evaporative emissions of ROGs are not small compared to the running emissions. Because the underlying data and methods available did not address evaporative emissions, they are not part of the emission factor ratio and must be accounted for separately. Accordingly, an estimate of the ratio of running to evaporative emissions for ROGs was determined and used to adjust the reductions for ROGs from vehicles.

Limitations to Quantification of Emission Reductions for Mitigation Measures

In order to properly apply the quantification methods in this Report, it is important to understand the limitations of the methods. The following discusses the limitations of the underlying data and methods used to develop the quantification in this Report. A discussion of the limits on applying the methods in the Report is contained in Chapter 6. Further, the Fact Sheet for each individual measure identifies specific limitations and considerations that affect the application of that particular measure.

Prediction of Future Behavior: In order to assess the emissions associated with a project that does not yet exist, it is necessary to make assumptions regarding anticipated amounts of energy use, VMT, water use, etc, that will characterize the project once it occurs. These values may be based on estimates of source metrics from surveys of current values for those metrics, or from recent historical values. When such data are used, they are typically assumed to remain constant when applied to the project unless there is a specific action (such as the application of a mitigation measure) that would alter the value(s). Although this is a commonly accepted practice, in reality, current behavior is not likely to remain constant over time in the way it is assumed. For instance, the occupant of a building determines the set point of thermostats, the duration of showers, and the usage of air conditioning, among other things. The project proponent will have little, if any, influence over these choices made by the future occupants.

Understanding the limits of these predictions, they are still the best basis for estimating future behavior. For this Report, quantification was based on current median behavior attributes. The limitations of the predictions can be minimized, however. Information about what influences behavior in specific circumstances is often available. Where data are available to show the relationship between external factors and the source metrics used to quantify a particular measure (such as fuel prices and VMT, for example), and more specific information is available about those external factors to predict future trends, that information could be used to further refine the quantification presented here. Again, the quality of the data used will substantially affect the accuracy and reliability of the results. It is also important to be aware of, and to minimize if possible, the error that can result from combining data from different sources (see below).

Combination of Data Sources: The quantification of some of the measures in this Report required the use of multiple sources of data. Any time data are derived from different sources there may be slight discrepancies the underlying in methodologies and data set characteristics; when the information between two data sets is combined, the discrepancies may affect the ultimate quantification of emissions, either over- or underestimating them. For example, some energy efficient appliances were not directly called out in the study of primary energy use based on end use. To obtain information on specific end uses, a secondary source was consulted that quantified energy use by end uses, and the values from this study were used to provide the detail where the end use data were lacking in the first study. It is not possible to determine the precise magnitude of the error that combining these two data sets induced in the final quantification, however every effort was made to minimize potential errors through thorough review of available data and exclusion of incompatible data sets.

There may be data sets available when considering a specific project that address the particulars of the project but are not generally applicable. Such case-specific data could be substituted for the more general data used to develop the quantifications in this Report. If such a substitution is considered, it is important to understand that it can result in an error in the quantification of the mitigation measure reductions because the methods used to derive the case-specific data may contain different assumptions that are not considered in, or are not consistent with the mitigation measure as characterized in the Fact Sheet. Anyone proposing the use of alternative underlying data for source metrics or emission factors must have a good understanding of the assumptions used in estimating the metrics/factors used in the baseline methodology and measure quantification for this Report. The discussion of sources and methods in the measure Fact Sheets as well as the baseline methodology in Appendix B should provide sufficient information to make this assessment.

Understanding these caveats, use of source-specific data is generally an improvement over that of generalized data, and where good quality source-specific data are available, they should be used. CAPCOA will not be able to review case-specific changes to the methods in this Report; however, the local air district may be able to provide assistance or recommendations. The decision to allow alterations to methods, including substitution of underlying data sets, rests with the agency reviewing the project.

Projects That Involve More Than One Mitigation Measure: Each mitigation measure was quantified using a specific set of underlying data and assumptions, and will provide the most accurate and reliable results when the project precisely matches the description of the measure, with all of its assumptions and limitations. In reality, projects may differ from the described measures, or may involve the application of more than one measure. In order to ensure that the resulting quantification is appropriate and accurate, specific procedures are provided in Chapter 6 for combining mitigation measures.

Lack of Detailed Information: The quantification methods provided in this report have been developed to allow them to be applied to a range of project conditions and still yield accurate and reliable results. In order to do this, the methods require data inputs that reflect the specific conditions of the project. Because the project has not yet been completed, however, certain information about the project will not be known and must be either estimated or assumed based on standard procedures. For example, at the time of the CEQA process a project proponent might know the number of residential dwelling units that will be in the project, but not know the actual square footage individual units will have. Similarly, while the project proponent may know a general type of non-residential land uses planned, these are often generalized categories such as retail and do not reflect the true diversity and range of source category parameters that would occur between the specific types of retail that the project eventually has. Nor can a project proponent predict specific appliances that will be in buildings or frequency of use. Further, most projects rely on generalized trip rate and trip lengths information that are not specific to the project; these estimates may over or underestimate the actual trip rates and trip lengths generated by the project. In each of these cases, estimates of future conditions are made based on accepted procedures and available data. This Report does not provide, or in any way alter, guidance on the level of detail required for the review or approval of any project. For the purposes of CEQA documents, the current CEQA guidelines address the information that is needed.²

The lack of precise and accurate data inputs limits the quality of the quantified project baseline and mitigated emissions, however. This limitation can be minimized to the extent the project proponent is able to provide better predictive data, or establish incentives, agreements, covenants, deeds, or other means of defining and restricting future uses to allow more precise estimates of the emissions associated with them. Some of these means of refining the data may also be creditable as mitigation of the project. The approval of any such enhancements of the data, or credit as mitigation, is at the discretion of the agency reviewing the project.

Use of Case Studies: One method of enhancing the data available for a project is the use of case studies. Case studies generally have detailed information regarding a particular effect. However, there are limitations of using this information to quantify emissions in other situations since adequate controls may not have been studied to separate out combined effects. There may be features or characteristics in the case-study that do not translate to the project and therefore may over or underestimate the GHG emission reductions. For the most part, case studies were not used as the primary source in the development of the quantification methods in this report. Where case studies were used to enhance underlying data, the studies were carefully reviewed to ensure that appropriate controls were used and the data meet the quality requirements of this Report.

² See: California Natural Resources Agency: 2007 CEQA Guidelines – Title 14 California Code of Regulations, Sections 15125, 15126.2, 15144, and 15146.

Extent Reductions Are Demonstrated in Practice: Some of the GHG mitigation measures in this Report are open-ended with regards to the amount of reductions that are theoretically possible. There are, however, practical limitations to the amount of reductions that can actually be achieved. These limitations can include the cost to implement the measure, physical constraints (e.g., roof space for photovoltaic panels), mainstream availability of technology, regulatory constraints, and other practical considerations. In applying the quantification methods for these types of measures, it is important to evaluate the reasonableness and practicability of the assumptions regarding these parameters.

Over time, some of these limitations may change. Implementation costs decrease as advanced technology is reaches mass production scale, for example, technological innovation can address physical constraints, and regulations change. The determination of feasibility for project assumptions should therefore be reconsidered for future applications based on the best available information at the time.

Biogenic CO₂ Emissions: This document did not address biogenic CO₂ emissions. Biogenic CO₂ emissions result from materials that are derived from living cells, as opposed to CO₂ emissions derived from fossil fuels, limestone, and other materials that have been transformed by geological processes. Biogenic CO₂ contains carbon that is present in organic materials that include, but are not limited to, wood, paper, vegetable oils, animal fat, and waste from food, animals, and vegetation (such as yard or forest waste). Biogenic CO₂ emissions are excluded from these GHG emissions quantification methods because they are the result of materials in the biological/physical carbon cycle, rather than the geological carbon cycle.

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Chapter 5: Discussion of Select Quantified Measures

Introduction

The mitigation measures quantified for this Report fall into general categories within which the quantification methods follow a common approach. The following sections summarize the select categories and subcategories of measures and discuss the quantification methods used for each one. In general, emission reductions are quantified (1) as a percentage of the baseline emissions; or (2) by calculating mitigated emissions and determining the change in emissions relative to the baseline case. More detailed explanation of the parameters and equations used to calculate the emission reductions for each individual measure are provided in the Fact Sheets in Chapter 7.

Building Energy Use

The emissions associated with building energy use come from power generation that provides the energy used to operate the building. Power is typically generated by a remote, central electricity generating plant, or onsite generation by fuel combustion. These emissions can be reduced by lowering the amount of electricity and natural gas required for building operations. This can be achieved by designing a more energy-efficient building structure and/or installing energy-efficient appliances. Replacing high-emitting energy generation with clean energy will also reduce emissions, and that type of mitigation is discussed in “On-site Energy Generation” below.



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As discussed in Chapter 3, this Report does not include a lifecycle analysis for GHG emissions. However, if a project proposes mitigation in the form of improved building energy use, a limited analysis of indirect emissions will be needed to quantify the associated reductions in GHG emissions. Emissions associated with energy use to light and heat buildings are, as stated previously, well-defined and not considered to be “lifecycle emissions” for the purposes of this Report. The quantification methods in this Report that deal with building energy use provide a specific method for conducting that analysis.

Emission reductions in this category are quantified as percentage reductions in specific baseline energy end uses, such as Title 24-regulated energy or household appliance energy use. The baseline values are determined using California-specific energy end use databases such as California Commercial End-Use Survey (CEUS) and Residential Appliance Saturation Study (RASS). The percentage reduction in Title-24 regulated energy is a project-specific input, whereas the percentage reductions in energy use for

energy-efficient models of various household appliances can be obtained from literature sources (for example, through the Energy Star program).

Outdoor Water Use

Energy use associated with pumping, treating and conveying water generates indirect GHG emissions. The amount of energy required depends on both the volume of water and energy intensity associated with the water source. For example, it generally takes less energy to pump and convey water from a local source than to transport water across long distances. As a result, the GHG emission factor associated with locally-sourced water will also be lower. Indirect GHG emissions associated with water use can be decreased by reducing the water demand and/or by using a less energy-intensive water source. As discussed in Chapter 3, these emissions are well-defined and are not considered to be “lifecycle emissions” for the purposes of this report.

Outdoor water use at mixed-use developments is associated with irrigation for landscaping. The volume of water required for landscaping will depend on the areal extent of landscaping; the specific watering needs for the type of vegetation; and the water efficiency of the irrigation system. A reduction in outdoor water demand can be achieved by designing water-efficient landscapes that include plants with relatively low watering needs; minimizing areas of water-intensive turf; and installing smart irrigation systems to avoid excessive water use.



Emission reductions associated with water-efficient design are quantified as the difference between mitigated and baseline values, which in turn are estimated using established models from government agencies or scientific literature. Emission reductions associated with smart irrigation systems and turf minimization are quantified as percentage reductions from the baseline. The implementation of gray water systems, where allowed, and the use of recycled water

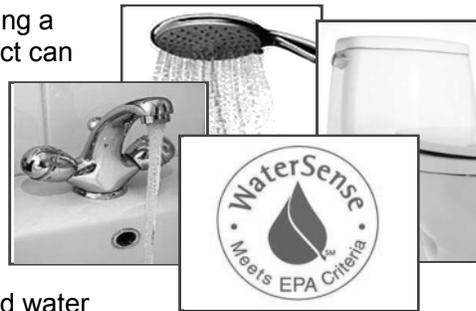
can also reduce emissions; however, it is important to consider the energy used to operate the gray water or water recycling system. These percentages are either taken from literature or estimated using site-specific data. The quantification methods in this Report include estimates of electricity use for recycled water systems, but not for gray water systems, because those emissions are generally more site specific.

As described previously, the energy use intensity for water supply will depend on the water source and its associated treatment and conveyance requirements. The typical or baseline scenario water source for Southern California is the State Water Project; however, other less-energy intensive supplies such as locally-treated recycled wastewater may instead be used to satisfy some of the project’s non-potable water demand. Energy intensity values for different water sources can be obtained from California Energy Commission reports on water-related energy use, and are provided in Appendix E (Table E-2). Emissions associated with water use are estimated by

multiplying the volume of water by the energy intensity value for the water source. The associated emission reduction is quantified by calculating emissions associated with water supplied by the lower impact water source (which can include the gray water or recycled water systems mentioned above), and subtracting it from the emissions associated with the same volume of water using the typical or baseline scenario water source.

Indoor Water Use

Similar to outdoor water use, indirect GHG emissions from indoor water use can be reduced by decreasing water demand or using a less energy-intensive water source. A project can reduce its indoor water demand relative to the baseline scenario by installing low-flow and high-efficiency water fixtures and appliances such as toilets, showerheads, faucets, clothes washers, and dishwashers.



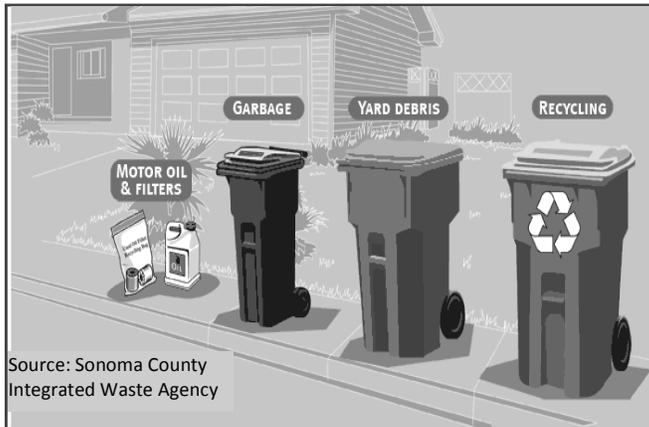
Emission reductions associated with reduced water demand will be directly proportional to the decrease in demand. The total percentage reduction can be estimated by summing the reductions associated with each type of water-saving feature, which can be obtained from such sources as the California Green Building Standards Code or Energy Star standards. This total percentage would then be multiplied by the project's baseline demand, which should be available from the project's water assessment report. If the water assessment also has an estimate of mitigated water demand, which incorporates the reductions associated with water-saving features, then the reduction can be directly calculated as the difference between baseline and mitigated values.

Emission reductions associated with lower-impact water sources can be quantified as described above for outdoor water use.

Municipal Solid Waste

Solid waste generated at a site can directly produce GHG emissions via decomposition or incineration; it also generates vehicle-based emissions from trucks required to transport waste from its source to the waste handling facility. A reduction in the mass of municipal solid waste sent to landfills would lower emissions associated with its transport and treatment. This can be achieved by reducing the rate at which waste is generated, or by diverting material away from the landfill via on-site composting, reuse,

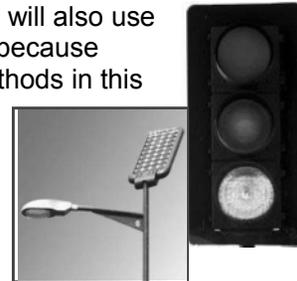
or recycling operations (although direct and transport-related emissions associated with the alternate fates must be accounted for too).



Most methods to quantify municipal solid waste involve life-cycle assessments. The fact sheets describe the inventory emissions and the available tools that should be used if the Local Agency or project Applicant would like to quantify the benefits of a solid waste measure with respect to a reduction in life-cycle emissions.

Public Area and Traffic Signal Lighting

Energy use for lighting generates indirect GHG emissions. The amount of energy required for lighting depends in part on the number and energy needs of the lamps. Indirect emissions from lighting energy use can be reduced by installing energy-efficient lamps that maintain the same efficacy beyond what is required to meet any government standards. The replacement of existing, incandescent traffic signal lamps with light-emitting diode (LED) versions will reduce traffic light energy use relative to the baseline. New public lighting fixtures outfitted with energy-efficiency lamps will also use less electricity than the existing baseline energy use. However, because regulations require all new traffic lights to be LED-based, the methods in this Report do not quantify a reduction associated with LED traffic lights for new traffic intersections. Emissions reductions for lighting-based mitigation measures are quantified as percentages of the baseline emissions. The percentage reductions for energy-efficiency lighting are based on a survey of literature data.



Vegetation (including Trees)

As discussed in Chapter 3, vegetation incorporates carbon into its structure during its growth phase, and thereby can remove a finite amount of carbon from the atmosphere. The sequestration capacity of on-site vegetation is determined by the area available for vegetation, and the types of vegetation installed. A project can increase the area available for vegetation by converting previously developed land into vegetated open space. Conversions from one type of vegetated land to another may increase or decrease carbon sequestration, depending on the relative sequestration capacities of

the land types. A third way to increase sequestration is by planting new trees on either developed or undeveloped land.

The increase in carbon sequestration capacity is determined by calculating the total sequestration capacity of converted land, new vegetated land and trees; and then subtracting the combined capacity of vegetated land or trees that are removed. Carbon sequestration capacities for different land types (e.g. cropland, forest land) and for different tree species classes are available from IPCC guidelines, and summarized in Table E-2, in Appendix E.

Construction Equipment

Construction equipment typically uses diesel fuel and releases emissions based on the amount of fuel combusted and emission factor of the equipment. Emissions can be reduced by using equipment that emits fewer pollutants for the same amount of work.



This is typically equipment powered through grid electricity or hybrid technology. The exclusive use of grid electricity eliminates the diesel emissions at the site but would increase indirect electricity emissions. However, grid-based emissions are typically small compared to the emissions from the diesel-fueled equipment (depending on the source of grid power). Hybrid-powered equipment would decrease but not completely eliminate fuel use. The electricity for hybrid

equipment is self-generated unless the equipment has plug-in capability, so it would not increase grid-based electrical generation and the associated emissions there.

The emissions reductions in this category are determined by finding the difference between the estimated mitigation emissions and the baseline emissions for construction equipment. Emissions for the mitigated scenario may consist of direct emissions from combustion fuel use, and/or indirect emissions from grid electricity. These would be calculated using resources described previously, such as the OFFROAD database and literature-based methodologies and values.

Transportation

Transportation emissions can be reduced by improving the emissions profile of the vehicle fleet that travels the roads, or by reducing the vehicle miles traveled by the fleet. The majority of the measures quantified for this report focus on the reduction of VMT. This can be accomplished by optimizing the location and types of land uses in the project and its immediate vicinity, and by site enhancements to roads, and to bike and pedestrian networks to encourage the use of alternative modes of transportation. Mode shifts are also encouraged by implementing parking policies, transit system improvements, and trip reduction coordination or incentive programs.

The emission reductions in this category are determined by evaluating the elasticity of a measure relative to the amount of vehicle miles traveled that may be reduced as a result of the mitigation measure.

A few transportation measures in this Report are aimed at improving the emissions profile of the vehicle fleet. These measures promote alternative fuel, hybrid or electrical vehicles. The emission reductions in these measures are based on the improved emission factors and on changes to the assumed vehicle fleet mix.

On-Site Energy Generation

Different modes of energy generation have different GHG emission intensities. Fossil fuel-based generation emits GHG gases from combustion of the fuel, with the amount of emissions depending on the quantity and type of fuel used. Renewable energy generation, on the other hand, typically has significantly fewer emissions, and some types do not have any associated GHG emissions, such as photovoltaic systems and solar hot water heaters (excluding lifecycle emissions, as previously described in Chapter 3).



Solar Array at Coronado Naval Base

The emission reductions associated with using renewable non-emitting energy generated on-site are quantified as the emissions avoided because an equivalent amount of grid energy is not used. To calculate this, the energy generated by the on-site system(s) must be quantified, and then multiplied by the utility-specific emission factor for the type of energy (e.g. electricity, natural gas) being replaced. Energy generated on site is usually used for building operations; hence, it is generally considered a mitigation measure for building energy use.

Miscellaneous

The following miscellaneous mitigation measures are also discussed:

Loading Docks: A project applicant may elect to limit idling of engines beyond what is required by regulation at loading docks, or provide electrified loading docks. Electrified loading docks reduce the need for diesel auxiliary engines to run in order to keep refrigerated transportation units temperature controlled. The emission reduction is a comparison of the GHG emissions associated with the electricity compared to the diesel fuel combustion.

Off-site Mitigation: At the discretion of the reviewing agency, emission reductions may be created with offsite mitigation projects, as described in Chapter 2. If an off-site

mitigation project is approved, the amount of emission reductions generated depends on the type of project implemented.

The numerical emission reductions would be quantified using the methods described for the different project categories above, with baseline values derived for the off-site location (instead of the project's baseline scenario). Once the numerical reductions have been estimated, they can be compared to the project's baseline emissions in order to determine the relative percentage reductions. Certain types of off-site projects may result in one-time emissions and others may result in a continuing stream of emissions reductions.

Carbon Sequestration: Emission reductions may be generated by implementing a carbon sequestration project. Carbon sequestration may be biological, chemical, or physical in nature, as described in Chapter 3. This Report does not address chemical or physical sequestration projects.

For biological sequestration, emission reductions are calculated as for vegetation projects (see above). The amount of the sequestration equals the amount of carbon removed by the vegetation.

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Chapter 6: Understanding and Using the Fact Sheets

This chapter of the Report explains how the quantification of individual strategies is presented in Fact Sheets, how those fact sheets are designed and organized, and how to use them. This chapter also explains how and why mitigation measures have been grouped, and provides detailed discussion of how to apply the quantification methods when more than one strategy is being applied to the same project. A summary of the range of effectiveness for different measures is also provided for general information purposes, in table form, however it is very important that those generalized ranges NOT be used in place of the more specific quantification methods for the measure as detailed in the measure Fact Sheet. Finally, at the end of the Chapter there are step-by-step instructions on using the Fact Sheets, including an example.

Mitigation Strategies and Fact Sheets:

Accurate and reliable quantification depends on properly identifying the important variables that affect the emissions from an activity or source, and from changes to that activity or source. In order to provide a clear summary of those variables and usable instructions on how to find and apply the data needed, we have designed a Fact Sheet format to present each strategy or measure.

Types of Mitigation Strategies: There are three different types of mitigation strategies described in Chapter 7: Quantified measures, Best Management Practices, and General Plan strategies.

Quantified Measures: Quantified measures are fully quantified, project-level mitigation strategies. They are presented in categories where the nature of the underlying emissions sources are the same; the categories are discussed under “Organization of Fact Sheets” below. In addition, the measures may either stand alone, or be considered in connection with one or more other measures (that is, “grouped”). Groups of measures are always within a category; more detailed explanation is provided in “Grouping of Strategies” below. The majority of the strategies in this Report are fully Quantified Measures, and a strategy may be assumed to be of this type unless the Fact Sheet notes otherwise.

Best Management Practices: Several strategies are denoted as Best Management Practice (BMP). These measures are of two types. The first type of BMPs are quantifiable and describe methods that can be used to quantify the GHG mitigation reductions provided the project Applicant can provide substantial evidence supporting the values needed to quantify the reduction. These are listed as BMPs since there is not adequate literature at this time to generalize the mitigation measure reductions. However, the project Applicant may be able to provide the site specific information necessary to quantify a reduction. The second type of BMPs do not have methods for quantifying GHG mitigation reductions. These measures have preliminary evidence suggesting they will reduce GHG emissions if implemented, however, at this time adequate literature and methodologies are not available to quantify these reductions or

they involve life-cycle GHG emission benefits. The measures are encouraged to be implemented nonetheless. Local Agencies may decide to provide incentives to encourage implementation of these measures.

General Plan Strategies: The measures listed under the General Plan category are measures that will have the most benefit when implemented at a General Plan level, but are not quantifiable or applicable at the project specific level. While on a project basis some of these measures may not be quantifiable, at the General Plan level they may be quantified under the assumption that this will be implemented on a widespread basis. Local Agencies may decide to provide incentives or allocate the General Plan level reductions to specific projects by weighting the overall effect by the number of projects the General Plan reduction would apply to.

Introduction to the Fact Sheets: This Report presents the quantification of each mitigation measure in a Fact Sheet format. Each Fact Sheet includes: a detailed summary of each measure's applicability; the calculation inputs for the specific project; the baseline emissions method; the mitigation calculation method and associated assumptions; a discussion of the calculation and an example calculation; and finally a summary of the preferred and alternative literature sources for measure efficacy. The Fact Sheets are found in Chapter 7.

Layout of the Fact Sheets: Each Fact Sheet describes one mitigation measure. The mitigation measure has a unique number and is provided at the bottom of each page in that measure's Fact Sheet. This will assist the end user in determining where a mitigation measure fact sheet begins and ends while still preserving consecutive page numbers in the overall Report.

At the top of each Fact Sheet, the name of the measure category appears on the left, and the subcategory on the right. Cross-references to prior CAPCOA documents appear at the top left, below the category name. Specifically, measures labeled CEQA #: are from the *CAPCOA 2008 CEQA & Climate Change*¹ and measures labeled MP#: are from the *CAPCOA 2009 Model Policies for Greenhouse Gases in General Plans*². This cross-referencing is also included in the list of measures at the beginning of Chapter 7, and is intended to allow the user to move easily between the documents. The measure number is at the bottom of the page, on the right-hand side.

The fact sheets begin with a measure description. This description includes two critical components:

- (1) Specific language regarding the measure implementation – which should be consistent with the implementation method suggested by the project Applicant;
and

¹ Available online at <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>

² Available online at <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-ModelPolicies-6-12-09-915am.pdf>

- (2) A discussion of key support strategies that are required for the reported range of effectiveness.

Appendices with additional calculations and assumptions for some of the fact sheets are provided at the end of this document. Default assumptions should be carefully reviewed for project applicability. Appendix B details the methodologies that should be used to calculate baseline GHG emissions for a project.

Organization of the Fact Sheets – Categories and Subcategories: The Fact Sheets are organized by general emission category types as follows:

- Energy
- Transportation
- Water
- Landscape Equipment
- Solid Waste
- Vegetation
- Construction
- Miscellaneous Categories
- General Plans

Several of these main categories are split into subcategories, for ease of understanding how to properly address the effects of combining the measures. Strategies are organized into categories and subcategories where they affect similar types of emissions sources. As an example, the category of “Energy” includes measures that reduce emissions associated with energy generation and use. Within that category, there are subcategories of measures that address “Building Energy Use,” “Alternative Energy,” and “Lighting,” each with one or more measures in it. The measures in the subcategory are closely related to each other.

Categories and subcategories for the measures are illustrated in Charts 6-1 and 6-2, below. Chart 6-1 shows all of the measure categories EXCEPT the Transportation category, including their subcategories; note that not all categories have subcategories. Measures in the Transportation category are shown in Chart 6-2. There are a number of subcategories associated with the Transportation category. As shown in Chart 6-2, the primary measures in each subcategory are indicated in bold type, and the measures shown in normal type are either support measures, or they are explicitly “grouped” measures.

It is important to note that subcategories are NOT the same as “grouped” measures / strategies. The grouping of strategies connotes a specific relationship, and is explained in the next section, below.



Chart 6-1: Non-Transportation Strategies Organization

Understanding and Using the Fact Sheets

Energy		Water		Area Landscaping	Solid Waste	Vegetation	Construction	Miscellaneous	General Plans
BE Building Energy	AE Alternative Energy	WSW Water Supply	WUW Water Use	A Landscaping Equipment	SW Solid Waste	V Vegetation	C Construction	Misc Miscellaneous	GP General Plans
Exceed Title 24	Onsite Renewable Energy	Adopt a Water Conservation Strategy		Prohibit gas Powered Landscape Equipment	Institute or Extend Recycling & Composting Services	Plant Urban Trees	Use Alternative Fuels for Construction Equipment	Establish Carbon Sequestration	Fund Incentives for Energy Efficiency
Install Energy Efficient Appliances	Utilize Combined Heat & Power	Use Reclaimed Water	Install Low-Flow Fixtures	Implement Lawnmower Exchange Program Reduction: Grouped	Recycle Demolished Construction Material	New Vegetated Open Space	Use Electric or Hybrid Construction Equipment	Establish Off-site Mitigation	Establish a Local Farmer's Market
Install Programmable Thermostats Reduction: Grouped	Establish Methane Recovery	Use Graywater	Design Water-Efficient Landscapes	Electric Yard Equipment Compatibility Reduction Grouped			Limit Construction Equipment Idling	Implement an Innovative Strategy	Establish Community Gardens
Obtain 3rd Party Commissioning Reduction: Grouped		Use Locally Sourced Water	Use Water-Efficient Irrigation				Institute a Heavy-Duty Off-Road Vehicle Plan	Use Local and Sustainable Building Materials	Plant Urban Shade Trees
			Reduce Turf				Implement a Construction Vehicle Inventory Tracking System	Require BMP in Agriculture and Animal Operations	Implement Strategies to Reduce Urban Heat-Island Effect
			Plant Native or Drought-Resistant Vegetation					Require Environmentally Responsible Purchasing	

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

Chart 6-2: Transportation Strategies Organization

<p>Transportation Measures (Five Subcategories) Global Maximum Reduction (all VMT): urban = 75%, compact infill = 40%, suburban center or suburban with NEV = 20%, suburban = 15%</p>	<p>Global Cap for Road Pricing needs further study</p>
<p>Transportation Measures (Four Categories) Cross-Category Max Reduction (all VMT): urban = 70%, compact infill = 35%, suburban center or suburban with NEV = 15%, suburban = 10%</p>	<p>Max Reduction = 15% overall, work VMT = 25%, school VMT = 65%</p>
<p>Land Use / Location Max Reduction: urban = 65%, compact infill = 30%, suburban center = 10%, suburban = 5%</p>	<p>Road Pricing Management Max Reduction = 25%</p>
<p>Density (30%)</p>	<p>Commuter Trip Reduction (assumes mixed use) Max Reduction = 25% (work VMT) Max Reduction = 10% (school VMT)</p>
<p>Design (21.3%)</p>	<p>CTR Program Required = 21% work VMT Voluntary = 6.2% work VMT</p>
<p>Location Efficiency (65%)</p>	<p>Transit Fare Subsidy (20% work VMT)</p>
<p>Diversity (30%)</p>	<p>Employees Parking Cash-out (7.7% work VMT)</p>
<p>Destination Accessibility (20%)</p>	<p>Workplace Parking Pricing (19.7% work VMT)</p>
<p>Transit Accessibility (25%)</p>	<p>Alternative Work Schedules & Telecommute (6.5% work VMT)</p>
<p>BMR Housing (1.2%)</p>	<p>CTR Marketing (5.5% work VMT)</p>
<p>Orientation Toward Non-Auto Corridor</p>	<p>Employer-Sponsored Vanpool/Shuttle (13.4% work VMT)</p>
<p>Proximity to Bike Path</p>	<p>Ride Share Program (15% work VMT)</p>
	<p>Bike Share Program</p>
	<p>End of Trip Facilities</p>
	<p>Preferential Parking Permit</p>
	<p>School Pool (15.8% school VMT)</p>
	<p>School Bus (6.3% school VMT)</p>
	<p>Transit System Improvements Max Reduction = 10%</p>
	<p>Network Expansion (8.2%)</p>
	<p>Service Frequency / Speed (2.5%)</p>
	<p>Bus Rapid Transit (3.2%)</p>
	<p>Access Improvements</p>
	<p>Station Bike Parking</p>
	<p>Local Shuttles</p>
	<p>Park & Ride Lots*</p>
	<p>Parking Policy / Pricing Max Reduction = 20%</p>
	<p>Parking Supply Limits (12.5%)</p>
	<p>Unbundled Parking Costs (13%)</p>
	<p>On-Street Market Pricing (5.5%)</p>
	<p>Residential Area Parking Permits</p>
	<p>Neighborhood / Site Enhancement Max Reduction: without NEV = 5% with NEV = 15%</p>
	<p>Pedestrian Network (2%)</p>
	<p>Traffic Calming (1%)</p>
	<p>NEV Network (14.4% <NEV Parking>)</p>
	<p>Car Share Program (0.7%)</p>
	<p>Bicycle Network <Lanes> <Parking> <Land Dedication for Trails></p>
	<p>Urban Non-Motorized Zones</p>
	<p>Electricity Loading Docks</p>
	<p>Utilize Alternative Fueled Vehicles</p>
	<p>Utilize Electric or Hybrid Vehicles</p>

Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.

Grouping of Strategies

Strategies noted as “grouped” are separately documented in individual Fact Sheets but must be paired with other strategies within the category. When these “grouped” strategies are implemented together, the combination will result in either an enhancement to the primary strategy by improving its effectiveness or a non-negligible reduction in effectiveness that would not occur without the combination.

Rules for Combining Strategies or Measures

Mitigation measures or strategies are frequently implemented together with other measures. Often, combining measures can lead to better emission reductions than implementing a single measure by itself. Unfortunately, the effects of combining the measures are not always as straightforward as they might at first appear. When more and more measures are implemented to mitigate a particular source of emissions, the benefit of each additional measure diminishes. If it didn't, some odd results would occur. For example, if there were a series of measures that each, independently, was predicted to reduce emissions from a source by 10%, and if the effect of each measure was independent of the others, then implementing ten measures would reduce all of the emissions; and what would happen with the eleventh measure? Would the combination reduce 110% of the emissions? No. In fact, each successive measure is slightly less effective than predicted when implemented on its own.

On the other hand, some measures enhance the performance of a primary measure when they are combined. This Report includes a set of rules that govern different ways of combining measures. The rules depend on whether the measures are in the *same* category, or different categories. Remember, the categories include: Energy, Transportation, Water, Landscape Equipment, Solid Waste, Vegetation, Construction, Miscellaneous Categories, and General Plans.

Combinations Between Categories: The following procedures must be followed when combining mitigation measures that fall in separate categories. In order to determine the overall reduction in GHG emissions compared to the baseline emissions, the relative magnitude of emissions between the source categories needs to be considered. To do this, the user should determine the percent contribution made by each individual category to the overall baseline GHG emissions. This percent contribution by a category should be multiplied by the reduction percentages from mitigation measures in that category to determine the scaled GHG emission reductions from the measures in that category. This is done for each category to be combined. The scaled GHG emissions for each category can then be added together to give a total GHG reduction for the combined measures in all of the categories.

For example, consider a project whose total GHG emissions come from the following categories: transportation (50%), building energy use (40%), water (6%), and other (4%). This project implements a transportation mitigation measure that results in a 10% reduction in VMT. The project also implements mitigation measures that result in a 30% reduction in water usage. The overall reduction in GHG emissions is as follows:

Reduction from Transportation: $0.50 \times 0.10 = 0.05$ or 5%

Reduction from Water: $0.06 \times 0.30 = 0.018$ or 1.8%

Total Reduction: $5\% + 1.8\% = 6.8\%$

This example illustrates the importance of the magnitude of a source category and its influence on the overall GHG emission reductions.

The percent contributions from source categories will vary from project to project. In a commercial-only project it may not be unusual for transportation emissions to represent greater than 75% of all GHG emissions whereas for a residential or mixed use project, transportation emissions would be below 50%.

Combinations Within Categories: The following procedures must be followed when combining mitigation measures that fall within the same category.

Non-Transportation Combinations: When combining non-transportation subcategories, the total amount of reductions for that category should not exceed 100% except for categories that would result in additional excess capacity that can be used by others, but which the project wants to take credit for (subject to approval of the reviewing agency). This may include alternative energy generation systems tied into the grid, vegetation measures, and excess graywater or recycled water generated by the project and used by others. These excess emission reductions may be used to offset other categories of emissions, with approval of the agency reviewing the project. In these cases of excess capacity, the quantified amounts of excess emissions must be carefully verified to ensure that any credit allowed for these additional reductions is truly surplus.

Category Maximum- Each category has a maximum allowable reduction for the combination of measures in that category. It is intended to ensure that emissions are not double counted when measures within the category are combined. Effectiveness levels for multiple strategies within a subcategory (as denoted by a column in the appropriate chart, above) may be multiplied to determine a combined effectiveness level up to a maximum level. This should be done first to mitigation measures that are a source reduction followed by those that are a reduction to emission factors. Since the combination of mitigation measures and independence of mitigation measures are both complicated, this Report recommends that mitigation measure reductions within a category be multiplied unless a project applicant can provide substantial evidence indicating that emission reductions are independent of one another. This will take the following form:

$$\text{GHG emission reduction for category} = 1 - [(1-A) \times (1-B) \times (1-C)]$$

Where:

A, B and C = Individual mitigation measure reduction percentages for the strategies to be combined in a given category.

Global Maximum- A separate maximum, referred to as a global maximum level, is also provided for a combination across subcategories. Effectiveness levels for multiple strategies across categories may also be multiplied to determine a combined effectiveness level up to global maximum level.

For example, consider a project that is combining 3 mitigation strategies from the water category. This project will install low-flow fixtures (measure WUW-1), use water-efficient irrigation (measure WUW-4, and reduce turf (measure WUW-5). Reductions from these measures will be:

- low-flow fixtures 20% or 0.20 (A)
- water efficient irrigation 10% or 0.10 (B)
- turf reductions 20% or 0.20 (C)

To combine measures within a category, the reductions would be

$$\begin{aligned} &= 1-[(1-A) \times (1-B) \times (1-C)] \\ &= 1-[(1-.20) \times (1-.10) \times (1-.20)] \\ &= 1-[(0.8) \times (0.9) \times (.8)] \\ &= 1-0.576 = 0.424 \\ &= 42.4\% \end{aligned}$$

Transportation Combinations: The interactions between the various categories of transportation-related mitigation measures is complex and sometimes counter-intuitive. Combining these measures can have a substantive impact on the quantification of the associated emission reductions. In order to safeguard the accuracy and reliability of the methods, while maintaining their ease of use, the following rules have been developed and should be followed when combining transportation-related mitigation measures. The rules are presented by sub-category, and reference Chart 6-2 Transportation Strategies Organization. The maximum reduction values also reflect the highest reduction levels justified by the literature. The chart indicates maximum reductions for individual mitigation measures just below the measure name.

Cross-Category Maximum- A cross-category maximum is provided for any combination of land use, neighborhood enhancements, parking, and transit strategies (columns A-D in Chart 6-1, with the maximum shown in the top row). The total project VMT reduction across these categories should be capped at these levels based on empirical evidence.³ Caps are provided for the location/development type of the project. VMT reductions may be multiplied across the four categories up to this maximum. These include:

- Urban: 70% VMT
- Compact Infill: 35%
- Suburban Center (or Suburban with NEV): 15%
- Suburban: 10% (note that projects with this level of reduction must include a diverse land use mix, workforce housing, and project-specific transit; limited empirical evidence is available)

(See blue box, pp. 58-59.)

³ As reported by Holtzclaw, et al for the State of California.

As used in this Report, location settings are defined as follows:

Urban: A project located within the central city and may be characterized by multi-family housing, located near office and retail. Downtown Oakland and the Nob Hill neighborhood in San Francisco are examples of the typical urban area represented in this category. The urban maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average (assumed analogous to an ITE baseline) for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Central Berkeley	-48%
San Francisco	-49%
Pacific Heights (SF)	-79%
North Beach (SF)	-82%
Mission District (SF)	-75%
Nob Hill (SF)	-63%
Downtown Oakland	-61%

The average reflects a range of 48% less VMT/capita (Central Berkeley) to 82% less VMT/capita (North Beach, San Francisco) compared to the statewide average. The urban locations listed above have the following characteristics:

- o Location relative to the regional core: these locations are within the CBD or less than five miles from the CBD (downtown Oakland and downtown San Francisco).
- o Ratio or relationship between jobs and housing: jobs-rich (jobs/housing ratio greater than 1.5)
- o Density character
 - typical building heights in stories: six stories or (much) higher
 - typical street pattern: grid
 - typical setbacks: minimal
 - parking supply: constrained on and off street
 - parking prices: high to the highest in the region
- o Transit availability: high quality rail service and/or comprehensive bus service at 10 minute headways or less in peak hours

Compact infill: A project located on an existing site within the central city or inner-ring suburb with high-frequency transit service. Examples may be community redevelopment areas, reusing abandoned sites, intensification of land use at established transit stations, or converting underutilized or older industrial buildings. Albany and the Fairfax area of Los Angeles are examples of typical compact infill area as used here. The compact infill maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Franklin Park, Hollywood	-22%
Albany	-25%
Fairfax Area, Los Angeles	-29%
Hayward	-42%

The average reflects a range of 22% less VMT/capita (Franklin Park, Hollywood) to 42% less VMT/capita (Hayward) compared to the statewide average. The compact infill locations listed above have the following characteristics:

- o Location relative to the regional core: these locations are typically 5 to 15 miles outside a regional CBD
- o Ratio or relationship between jobs and housing: balanced (jobs/housing ratio ranging from 0.9 to 1.2)
- o Density character
 - typical building heights in stories: two to four stories
 - typical street pattern: grid
 - typical setbacks: 0 to 20 feet
 - parking supply: constrained
 - parking prices: low to moderate
- o Transit availability: rail service within two miles, or bus service at 15 minute peak headways or less

As used in this Report, additional location settings are defined as follows:

Suburban Center: A project typically involving a cluster of multi-use development within dispersed, low-density, automobile dependent land use patterns (a suburb). The center may be an historic downtown of a smaller community that has become surrounded by its region's suburban growth pattern in the latter half of the 20th Century. The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb. The suburban center maximum reduction is derived from the average of the percentage difference in per capita VMT versus the California statewide average for the following locations:

Location	Percent Reduction from Statewide VMT/Capita
Sebastopol	0%
San Rafael (Downtown)	-10%
San Mateo	-17%

The average reflects a range of 0% less VMT/capita (Sebastopol) to 17% less VMT/capita (San Mateo) compared to the statewide average. The suburban center locations listed above have the following characteristics:

- o Location relative to the regional core: these locations are typically 20 miles or more from a regional CBD
- o Ratio or relationship between jobs and housing: balanced
- o Density character
 - typical building heights in stories: two stories
 - typical street pattern: grid
 - typical setbacks: 0 to 20 feet
 - parking supply: somewhat constrained on street; typically ample off-street
 - parking prices: low (if priced at all)
- o Transit availability: bus service at 20-30 minute headways and/or a commuter rail station

While all three locations in this category reflect a suburban "downtown," San Mateo is served by regional rail (Caltrain) and the other locations are served by bus transit only. Sebastopol is located more than 50 miles from downtown San Francisco, the nearest urban center. San Rafael and San Mateo are located 20 miles from downtown San Francisco.

Suburban: A project characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb). Suburbs typically have the following characteristics:

- o Location relative to the regional core: these locations are typically 20 miles or more from a regional CBD
- o Ratio or relationship between jobs and housing: jobs poor
- o Density character
 - typical building heights in stories: one to two stories
 - typical street pattern: curvilinear (cul-de-sac based)
 - typical setbacks: parking is generally placed between the street and office or retail buildings; large-lot residential is common
 - parking supply: ample, largely surface lot-based
 - parking prices: none
- o Transit availability: limited bus service, with peak headways 30 minutes or more

The maximum reduction provided for this category assumes that regardless of the measures implemented, the project's distance from transit, density, design, and lack of mixed use destinations will keep the effect of any strategies to a minimum.

Global Maximum- A global maximum is provided for any combination of land use, neighborhood enhancements, parking, transit, and commute trip reduction strategies (the first five columns in the organization chart). This excludes reductions from road-pricing measurements which are discussed separately below. The total project VMT reduction across these categories, which can be combined through multiplication, should be capped

at these levels based on empirical evidence.⁴ Maximums are provided for the location/development type of the project. The Global Maximum values can be found in the top row of Chart 6-2.

These include:

- Urban: 75% VMT
- Compact Infill: 40% VMT
- Suburban Center (or Suburban with NEV): 20%
- Suburban: 15% (limited empirical evidence available)

Specific Rules for Subcategories within Transportation- Because of the unique interactions of measures within the Transportation Category, each subcategory has additional rules or criteria for combining measures.

❖ **Land Use/Location Strategies – Maximum Reduction Factors:** Land use measures apply to a project area with a radius of ½ mile. If the project area under review is greater than this, the study area should be divided into subareas of radii of ½ mile, with subarea boundaries determined by natural “clusters” of integrated land uses within a common watershed. If the project study area is smaller than ½ mile in radius, other land uses within a ½ mile radius of the key destination point in the study area (i.e. train station or employment center) should be included in design, density, and diversity calculations. Land use measures are capped based on empirical evidence for location setting types as follows:⁵

- Urban: 65% VMT
- Compact Infill: 30% VMT
- Suburban Center: 10% VMT
- Suburban: 5% VMT

❖ **Neighborhood/Site Enhancements Strategies – Maximum Reduction Factors:** The neighborhood/site enhancements category is capped at 12.7% VMT reduction (with Neighborhood Electric Vehicles (NEVs)) and 5% without NEVs based on empirical evidence (for NEVs) and the multiplied combination of the non-NEV measures.

❖ **Parking Strategies – Maximum Reduction Factors:** Parking strategies should be implemented in one of two combinations:

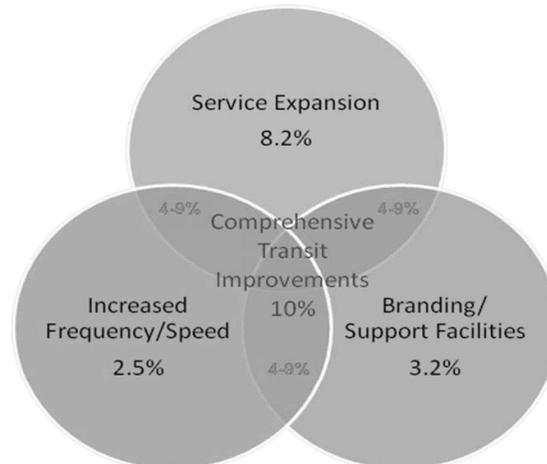
- Limited (reduced) off-street supply ratios plus residential permit parking and priced on-street parking (to limit spillover), or
- Unbundled parking plus residential permit parking and priced on-street parking (to limit spillover).

⁴ As reported by Holtzclaw, et al for the State of California. Note that CTR strategies must be converted to overall VMT reductions (from work-trip VMT reductions) before being combined with strategies in other categories.

⁵ As reported for California locations in Holtzclaw, et al. “Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and San Francisco.” *Transportation Planning and Technology*, 2002, Vol. 25, pp. 1–27.

Note: The reduction maximum of 20% VMT reflects the combined (multiplied) effect of unbundled parking and priced on-street parking.

- ❖ **Transit System Strategies – Maximum Reduction Factors:** The 10% VMT reduction maximum for transit system improvements reflects the combined (multiplied) effect of network expansion and service frequency/speed enhancements. A comprehensive transit improvement would receive this type of reduction, as shown in the center overlap in the Venn diagram, below.



- ❖ **Commuter Trip Reductions (CTR) Strategies – Maximum Reduction Factors:** The most effective commute trip reduction measures combine incentives, disincentives, and mandatory monitoring, often through a transportation demand management (TDM) ordinance. Incentives encourage a particular action, for example parking cash-out, where the employee receives a monetary incentive for not driving to work, but is not punished for maintaining status quo. Disincentives establish a penalty for a status quo action. An example is workplace parking pricing, where the employee is now monetarily penalized for driving to work. The 25% maximum for work-related VMT applies to comprehensive CTR programs. TDM strategies that include only incentives, only disincentives, and/or no mandatory monitoring, should have a lower total VMT reduction than those with a comprehensive approach. Support strategies to strengthen CTR programs include guaranteed-ride-home, taxi vouchers, and message boards/marketing materials. A 25% reduction in work-related VMT is assumed equivalent to a 15% reduction in overall project VMT for the purpose of the global maximum; this can be adjusted for project-specific land use mixes.

Two school-related VMT reduction measures are also provided in this category. The maximum reduction for these measures should be 65% of school-related VMT based on the literature.

- ❖ Road Pricing/Management Strategies – Maximum Reduction Factors: Cordon pricing is the only strategy in this category with an expected VMT reduction potential. Other forms of road pricing would be applied at a corridor or region-wide level rather than as mitigation applied to an individual development project. No domestic case studies are available for cordon pricing, but international studies suggest a VMT reduction maximum of 25%. A separate, detailed, and project-specific study should be conducted for any project where road pricing is proposed as a VMT reduction measure.

Additional Rules for Transportation Measures- There are also restrictions on the application of measures in rural applications, and application to baseline, as follows:

- ❖ Rural Application: Few empirical studies are available to suggest appropriate VMT reduction caps for strategies implemented in rural areas. Strategies likely to have the largest VMT reduction in rural areas include vanpools, telecommute or alternative work schedules, and master planned communities (with design and land use diversity to encourage intra-community travel). NEV networks may also be appropriate for larger scale developments. Because of the limited empirical data in the rural context, project-specific VMT reduction estimates should be calculated.
- ❖ Baseline Application: As discussed in previous sections of this report, VMT reductions should be applied to a baseline VMT expected for the project, based on the Institute of Transportation Engineers' 8th Edition *Trip Generation Manual* and associated typical trip distance for each land use type. Where trip generation rates and project VMT provided by the project Applicant are derived from another source, the VMT reductions must be adjusted to reflect any "discounts" already applied.

Range of Effectiveness of Mitigation Measures

The following charts provide the range of effectiveness for the quantified mitigation measures. Each chart shows one category of measures, with subcategories identified. The charts also show the basis for the quantification, and indicate applicable groupings. IMPORTANT: these ranges are approximate and should NOT be used in lieu of the specific quantification method provided in the fact sheet for each measure. Restrictions on combining measures must be observed.

Table 6-1: Energy Category

Energy						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Building Energy Use	BE-1	Buildings exceed Title 24 Building Envelope Energy Efficiency Standards by X% (X is equal to the percentage improvement selected for the project)			For a 10% improvement over 2008 Title 24: Non-Residential electricity use: 0.2-5.5%; natural gas use: 0.7-10% Residential electricity use: 0.3-2.6%; natural gas use: 7.5-9.1%	
	BE-2	Install Programmable Thermostat Timers	x		BMP	
	BE-3	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	x	BE-1	BMP	
	BE-4	Install Energy Efficient Appliances			Residential building: 2-4% Grocery Stores: 17-22%	Appliance Electricity Use
	BE-5	Install Energy Efficient Boilers			1.2-18.4%	Fuel Use
Alternative Energy Generation	AE-1	Establish Onsite Renewable Energy Systems-Generic			0-100%	
	AE-2	Establish Onsite Renewable Energy Systems-Solar Power			0-100%	
	AE-3	Establish Onsite Renewable Energy Systems-Wind Power			0-100%	
	AE-4	Utilize a Combined Heat and Power System			0-46%	
	AE-5	Establish Methane Recovery in Landfills			73-77%	
	AE-6	Establish Methane Recovery in Wastewater Treatment Plants			95-97%	
Lighting	LE-1	Install Higher Efficacy Public Street and Area Lighting			16-40%	Outdoor Lighting Electricity Use
	LE-2	Limit Outdoor Lighting Requirements	x		BMP	
	LE-3	Replace Traffic Lights with LED Traffic Lights			90%	Traffic Light Electricity Use

Table 6-2: Transportation Category

Transportation						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Land Use / Location	LUT-1	Increase Density			1.5-30.0%	VMT
	LUT-2	Increase Location Efficiency			10-65%	VMT
	LUT-3	Increase Diversity of Urban and Suburban Developments (Mixed Use)			9-30%	VMT
	LUT-4	Incr. Destination Accessibility			6.7-20%	VMT
	LUT-5	Increase Transit Accessibility			0.5-24.6%	VMT
	LUT-6	Integrate Affordable and Below Market Rate Housing			0.04-1.20%	VMT
	LUT-7	Orient Project Toward Non-Auto Corridor			NA	
	LUT-8	Locate Project near Bike Path/Bike Lane			NA	
	LUT-9	Improve Design of Development			3.0-21.3%	VMT
Neighborhood / Site Design	SDT-1	Provide Pedestrian Network Improvements			0-2%	VMT
	SDT-2	Traffic Calming Measures			0.25-1.00%	VMT
	SDT-3	Implement a Neighborhood Electric Vehicle (NEV) Network			0.5-12.7%	VMT
	SDT-4	Urban Non-Motorized Zones		SDT-1	NA	
	SDT-5	Incorporate Bike Lane Street Design (on-site)		LUT-9	NA	
	SDT-6	Provide Bike Parking in Non-Residential Projects		LUT-9	NA	
	SDT-7	Provide Bike Parking in Multi-Unit Residential Projects		LUT-9	NA	
	SDT-8	Provide EV Parking		SDT-3	NA	
	SDT-9	Dedicate Land for Bike Trails		LUT-9	NA	
Parking Policy / Pricing	PDT-1	Limit Parking Supply			5-12.5%	
	PDT-2	Unbundle Parking Costs from Property Cost			2.6-13%	
	PDT-3	Implement Market Price Public Parking (On-Street)			2.8-5.5%	
	PDT-4	Require Residential Area Parking Permits		PDT-1, 2 & 3	NA	

Transportation - continued						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Trip Reduction Programs	TRT-1	Implement Voluntary CTR Programs			1.0-6.2%	Commute VMT
	TRT-2	Implement Mandatory CTR Programs – Required Implementation/Monitoring			4.2-21.0%	Commute VMT
	TRT-3	Provide Ride-Sharing Programs			1-15%	Commute VMT
	TRT-4	Implement Subsidized or Discounted Transit Prog.			0.3-20.0%	Commute VMT
	TRT-5	Provide End of Trip Facilities		TRT-1, 2 & 3	NA	
	TRT-6	Telecommuting and Alternative Work Schedules			0.07-5.50%	Commute VMT
	TRT-7	Implement Commute Trip Reduction Marketing			0.8-4.0%	Commute VMT
	TRT-8	Implement Preferential Parking Permit Program		TRT-1, 2 & 3	NA	
	TRT-9	Implement Car-Sharing Program			0.4-0.7%	VMT
	TRT-10	Implement School Pool Program			7.2-15.8%	School VMT
	TRT-11	Provide Employer-Sponsored Vanpool/Shuttle			0.3-13.4%	Commute VMT
	TRT-12	Implement Bike-Sharing Program		SDT-5, LUT-9	NA	
	TRT-13	Implement School Bus Program			38-63%	School VMT
	TRT-14	Price Workplace Parking			0.1-19.7%	Commute VMT
	TRT-15	Implement Employee Parking “Cash-Out”			0.6-7.7%	Commute VMT

Transportation - continued						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Transit System Improvements	TST-1	Provide a Bus Rapid Transit System			0.02-3.2%	VMT
	TST-2	Implement Transit Access Improvements		TST-3, TST-4	NA	
	TST-3	Expand Transit Network			0.1-8.2%	VMT
	TST-4	Increase Transit Service Frequency/Speed			0.02-2.5%	VMT
	TST-5	Provide Bike Parking Near Transit		TST-3, TST-4	NA	
	TST-6	Provide Local Shuttles		TST-3, TST-4	NA	
Road Pricing / Management	RPT-1	Implement Area or Cordon Pricing			7.9-22.0%	VMT
	RPT-2	Improve Traffic Flow			0-45%	VMT
	RPT-3	Require Project Contributions to Transportation Infrastructure Improvement Projects		RPT-2, TST-1 to 6	NA	
	RPT-4	Install Park-and-Ride Lots		RPT-1, TRT-11, TRT-3, TST-1 to 6	NA	
Vehicles	VT-1	Electrify Loading Docks and/or Require Idling-Reduction Systems			26-71%	Truck Idling Time
	VT-2	Utilize Alternative Fueled Vehicles			Varies	
	VT-3	Utilize Electric or Hybrid Vehicles			0.4-20.3%	Fuel Use

Table 6-3: Water Category

Water						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Water Supply	WSW-1	Use Reclaimed Water			up to 40% for Northern California up to 81% for Southern California	Outdoor Water Use
	WSW-2	Use Gray Water			0-100%	Outdoor Water Use
	WSW-3	Use Locally-Sourced Water Supply			0-60% for Northern and Central California; 11-75% for Southern California	Indoor and Outdoor Water Use
Water Use	WUW-1	Install Low-Flow Water Fixtures.			Residential: 20% Non-Residential: 17-31%	Indoor Water Use
	WUW-2	Adopt a Water Conservation Strategy.			varies	
	WUW-3	Design Water-Efficient Landscapes			0-70%	Outdoor Water Use
	WUW-4	Use Water-Efficient Landscape Irrigation Systems			6.1%	Outdoor Water Use
	WUW-5	Reduce Turf in Landscapes and Lawns			varies	
	WUW-6	Plant Native or Drought-Resistant Trees and Vegetation			BMP	

Table 6-4: Area Landscaping

Area Landscaping						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Area Landscaping	A-1	Prohibit Gas Powered Landscape Equipment.			LADWP: 2.5-46.5% PG&E: 64.1-80.3% SCE: 49.5-72.0% SDGE: 38.5-66.3% SMUD: 56.3-76.0%	Fuel Use
	A-2	Implement Lawnmower Exchange Program			BMP	
	A-3	Electric Yard Equipment Compatibility		A-1 or A-2	BMP	

Table 6-5: Solid Waste Category

Solid Waste						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Solid Waste	SW-1	Institute or Extend Recycling and Composting Services			BMP	
	SW-2	Recycle Demolished Construction Material			BMP	

Table 6-6: Vegetation Category

Vegetation						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Vegetation	V-1	Urban Tree Planting		GP-4	varies	
	V-2	Create new vegetated open space.			varies	

Table 6-7: Construction Category

Construction						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Construction	C-1	Use Alternative Fuels for Construction Equipment			0-22%	Fuel Use
	C-2	Use Electric and Hybrid Construction Equipment			2.5-80%	Fuel Use
	C-3	Limit Construction Equipment Idling beyond Regulation Requirements			varies	
	C-4	Institute a Heavy-Duty Off-Road Vehicle Plan		Any C	BMP	
	C-5	Implement a Vehicle Inventory Tracking System		Any C	BMP	

Table 6-8: Miscellaneous Category

Miscellaneous						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
Miscellaneous	Misc-1	Establish a Carbon Sequestration Project			varies	
	Misc-2	Establish Off-Site Mitigation			varies	
	Misc-3	Use Local and Sustainable Building Materials	x		BMP	
	Misc-4	Require Best Management Practices in Agriculture and Animal Operations	x		BMP	
	Misc-5	Require Environmentally Responsible Purchasing	x		BMP	
	Misc-6	Implement an Innovative Strategy for GHG Mitigation	x		BMP	

Table 6-9: General Plans

General Plan Strategies						
Category	Measure Number	Strategy	BMP	Grouped With #	Range of Effectiveness	
					Percent Reduction in GHG Emissions	Basis
General Plans	GP-1	Fund Incentives for Energy Efficiency	x		BMP	
	GP-2	Establish a Local Farmer's Market	x		BMP	
	GP-3	Establish Community Gardens	x		BMP	
	GP-4	Plant Urban Shade Trees	x	V-1	BMP	
	GP-5	Implement Strategies to Reduce Urban Heat-Island Effect	x		BMP	

Applicability of Quantification Fact Sheets Outside of California

In order to apply the quantification methods in this Report to projects located outside of California, the assumptions and methods in the baseline methodology and in the Fact Sheets should be reviewed prior to applying them. First, evaluate the basis for use metrics and emission factors for applicability outside of California. The Report references various sources for use metrics and emission factors; if these are California-specific, the method should be evaluated to determine if these same use metrics and emission factors are applicable to the project area. If they are not applicable, factors appropriate for the project area should be substituted in the baseline and project methods. Key factors to consider are climate zone⁶, precipitation, building standards, end-user behavior, and transportation environment (land use and transportation characteristics). Use metrics likely to vary outside of California include:

- Building Energy Use
- Water Use
- Vehicle Trip Lengths and Vehicle Miles Traveled
- Building Standards
- Waste Disposal Rates
- Landscape Equipment Annual Usage

Emission factors relate the use metric to carbon intensity to estimate GHG emissions. Depending on the type of emission factor, these values may or may not change based on location. For instance, the emission factor for combustion of a specific amount of fuel does not typically change; however the engine mix may change by location, and fuel use by those engines may be different. Other emission factors are regionally dependent and alternative sources should be investigated. Emission factors likely to vary outside of California include:

- Electricity associated with water and wastewater supply and treatment
- Carbon intensity of electricity supplied
- Fleet and model year distribution of vehicles which influences emission factors

The user should be able to adjust the methodologies to: (1) calculate the baseline for a given mitigation measure; and then (2) incorporate the appropriate data and assumptions into the calculations for the emission mitigation associated with the measure.

There is at least one mitigation measure that will not be applicable outside of California unless adjustments are made by substituting location-specific factors in the baseline methodology: the improvement beyond Title 24 (BE-1) is not applicable outside of California since buildings outside California would be subject to different building codes. The project Applicant may be able to estimate a baseline energy use for building envelope systems under other building standards and estimate the change in energy use for improvements to building envelope systems using building energy software or literature surveys.

⁶ Climate zones are specific geographic areas of similar climatic characteristics, including temperature, weather, and other factors which affect building energy use. The California Energy Commission identified 16 Forecasting Climate Zones (FCZs) within California.

How to Use a Fact Sheet to Quantify a Project

This section provides step-by-step instructions and an example regarding how a fact sheet can be used. After choosing the appropriate fact sheet(s), follow these general steps. Steps may need to be adjusted for different types of fact sheets.

Step 1: Does this fact sheet apply?

Carefully read the measure's description and applicability to ensure that you are using the correct fact sheet.

Step 2: Is the measure "grouped"?

Check Tables 6-1 to 6-9 to see if the measure is "grouped" with other measures. If it is, then all measures in the group must be implemented together.

Step 3: Review defaults

Review the default assumptions in the fact sheet.

Step 4: Data inputs

Determine the type of data and data sources necessary. Refer to Appendix B and other suggested documents.

Step 5: Calculate baseline emissions

Calculate baseline emissions using formulas provided in the fact sheet.

Step 6: Percent reductions

If applicable, calculate the percent reduction for the specific action in the measure.

Step 7: Quantify reductions

Quantify emission reductions for a particular mitigation measure using the provided formula.

Step 8: Grouped measures

If you are using a mitigation measure that is grouped with another measure, refer to Tables 6-1 to 6-9 and complete the calculations for all measures that are grouped together for a particular mitigation strategy.

Step 9: Multiple measures

See Chapter 6 for how to combine reductions from multiple measures.

IMPORTANT: Clearly document information such as data sources, data used, and calculations.

Example:

The following is an example calculation for a building project that will use Fact Sheet 2.1.1 - *Exceed Title 24 Building Envelope Energy Efficiency Standards by X%*. In this example, a large office building is being built, and it will be designed to do 10% more than Title 24 standards for both electricity and natural gas.

➤ **Step 1 – Does this fact sheet apply?**

The project and fact sheet have been reviewed, and YES, this fact sheet is appropriate to use to estimate reductions from the project.

- **Step 2 - Is the measure “grouped”?**
NO, this is a measure that does not have to be done with other measures.
- **Step 3 – Review defaults**
Default assumptions and emission factors have been reviewed and used, as appropriate.
- **Steps 4 – Data inputs**
The table below shows the data needed for the example, the sample data input, and the source of the sample data. Make sure the data use the units specified in the equation. *

Data for Fact Sheet 2.1.1 Example		
Data Needed	Input	Source of Data
Project type	Commercial land use = Large Office	User Input
Size	100,000 sq. ft	User Input
Climate Zone	1	From Figure BE 1.1
Electricity Intensity _{baseline}	8.32 kWh/SF/yr	From Fact Sheet 2.1.1
Utility Provider	PG&E	User Input
Emission Factor _{Electricity}	2.08E-4 MT CO ₂ e/kWh	Fact Sheet 2.1.1
Natural Gas Intensity _{baseline}	18.16 kBTU/SF/yr	From Fact Sheet 2.1.1
Emission Factor _{Natural Gas}	5.32E-5 MT CO ₂ e/therm	From Fact Sheet 2.1.1
% Reduction Commitment	10% over 2008 Title 24 Standards	User Input

- **Step 5 – Calculate baseline emissions**
Once all necessary information has been obtained, use the equation provided to determine the baseline emissions. Round results to the nearest MT.
 - ⇒ GHG Emissions Baseline_{Electricity} = Electricity Intensity_{Baseline} x Size x Emission Factor_{Electricity}

$$= 8.32 \text{ kWh/SF/yr} \times 100,000 \text{ SF} \times (2.08\text{E-}4 \text{ MT CO}_2\text{e/kWh})$$

$$= \mathbf{173 \text{ MT CO}_2\text{e/yr [Baseline GHG Emissions for Electricity]}$$
 - ⇒ GHG Emissions Baseline_{Natural Gas} = Natural Gas Intensity_{Baseline} x Size x Emission Factor_{Natural Gas}

$$= 18.16 \text{ kBTU/SF/yr} \times 100,000 \text{ SF} \times (5.32\text{E-}5 \text{ MT CO}_2\text{e/kBTU})$$

$$= \mathbf{97 \text{ MT CO}_2\text{e/yr [Baseline GHG Emissions for Natural Gas]}$$
 - ⇒ GHG Emissions_{Baseline} = GHG Emissions Baseline_{Electricity} + GHG Emissions Baseline_{Natural Gas}

$$= 173 \text{ MT CO}_2\text{e/yr} + 97 \text{ MT CO}_2\text{e/yr}$$

$$= \mathbf{270 \text{ MT CO}_2\text{e/yr}}$$
- **Step 6 – Percent reductions**

➤ **Step 8 – Grouped measures**

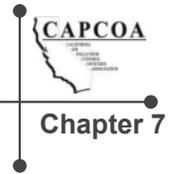
In this example, the measure is not grouped. For grouped measures, refer to Tables 6-1 to 6-9 in Chapter 6 for how to combine reductions.

➤ **Step 9 – Multiple measures**

See “Rules for Combining Strategies or Measures” section in Chapter 6 for how to add reductions from multiple measures

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Chapter 7: Fact Sheets



1.0 Introduction

Chapter 7 is made up of a series of Fact Sheets. Each sheet summarizes the quantification methodology for a specific mitigation measure. As described in Chapter 6, the measures are grouped into Categories, and, in some cases, into subcategories. For information about the development of the Fact Sheets, please see Chapter 4. For a discussion of specific quantification issues in select measure categories or subcategories, please refer to Chapter 5. Chapter 6 provides a detailed explanation of the organization and layout of the Fact Sheets, including rules that govern the quantification of measures that have been, or will be, implemented in combination.

In order to facilitate navigation through, and the use of, the Fact Sheets, they have been color coded to reflect the Category the measure is in, and if applicable, the subcategory. The color scheme is shown in Charts 6-1 and 6-2, and also in Table 7-1 (below).

The colored bar at the top of each Fact Sheet corresponds to the Category color as shown in Charts 6-1 and 6-2, and in Table 7-1; the Category name is shown in the colored bar at the left hand margin. The second colored bar, immediately below the first one, shows the name of the subcategory, if any, and corresponds to subcategory color in those charts and tables. The subcategory name appears at the right hand margin.

At the left hand margin, below the Category name, is a cross-reference to the corresponding measure in the previous two CAPCOA reports (*CEQA and GHG*; and *Model Policies for GHG in General Plans*). The term "MP#" refers to a measure in the Model Policies document. The term CEQA# refers to a measure in the CEQA and GHG report.

At the bottom of the page is a colored bar that corresponds to the Category, and, where applicable, there is a colored box at the right hand margin, contiguous with the colored bar. This color of the box corresponds to the subcategory, where applicable. The box contains the measure number.

The layout of information in each Fact Sheet is covered in detail in Chapter 6.

Table 7-1, below, provides an index and cross-reference for the measure Fact Sheets. It is color-coded, as explained above, and may be used as a key to more quickly and easily navigate through the Fact Sheets



Table 7-1: Measure Index & Cross Reference

Section	Category	Page #	Measure #	BMP	MP #	CEQA #
2.0	Energy	85				
2.1	Building Energy Use	85				
2.1.1	Buildings Exceed Title 24 Building Envelope Energy Efficiency Standards By X%	85	BE-1		EE-2	MM-E6
2.1.2	Install Programmable Thermostat Timers	99	BE-2	x	EE-2	-
2.1.3	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	101	BE-3	x	EE-2	-
2.1.4	Install Energy Efficient Appliances	103	BE-4		EE-2.1.6	MM E-19
2.1.5	Install Energy Efficient Boilers	111	BE-5		-	-
2.2	Lighting	115				
2.2.1	Install Higher Efficacy Public Street and Area Lighting	115	LE-1		EE-2.1.5	-
2.2.2	Limit Outdoor Lighting Requirements	119	LE-2	x	EE-2.3	-
2.2.3	Replace Traffic Lights with LED Traffic Lights	122	LE-3		EE-2.1.5	-
2.3	Alternative Energy Generation	125				
2.3.1	Establish Onsite Renewable Energy Systems-Generic	125	AE-1		AE-2.1	MM E-5
2.3.2	Establish Onsite Renewable Energy Systems-Solar Power	128	AE-2		AE-2.1	MM E-5
2.3.3	Establish Onsite Renewable Energy Systems-Wind Power	132	AE-3		AE-2.1	MM E-5
2.3.4	Utilize a Combined Heat and Power System	135	AE-4		AE-2	-
2.3.5	Establish Methane Recovery in Landfills	143	AE-5		WRD-1	-
2.3.6	Establish Methane Recovery in Wastewater Treatment Plants	149	AE-6			
3.0	Transportation	155				
3.1	Land Use/Location	155				
3.1.1	Increase Density	155	LUT-1		LU-1.5 & LU-2.1.8	MM D-1 & D-4
3.1.2	Increase Location Efficiency	159	LUT-2		LU-3.3	-
3.1.3	Increase Diversity of Urban and Suburban Developments (Mixed Use)	162	LUT-3		LU-2	MM D-9 & D-4
3.1.4	Increase Destination Accessibility	167	LUT-4		LU-2.1.4	MM D-3
3.1.5	Increase Transit Accessibility	171	LUT-5		LU-1,LU-4	MM D-2
3.1.6	Integrate Affordable and Below Market Rate Housing	176	LUT-6		LU-2.1.8	MM D-7
3.1.7	Orient Project Toward Non-Auto Corridor	179	LUT-7		LU-4.2	LUT-3
3.1.8	Locate Project near Bike Path/Bike Lane	181	LUT-8		-	LUT-4
3.1.9	Improve Design of Development	182	LUT-9		-	-
3.2	Neighborhood/Site Enhancements	186				
3.2.1	Provide Pedestrian Network Improvements	186	SDT-1		LU-4	MM-T-6
3.2.2	Provide Traffic Calming Measures	190	SDT-2		LU-1.6	MM-T-8
3.2.3	Implement a Neighborhood Electric Vehicle (NEV) Network	194	SDT-3		TR-6	MM-D-6
3.2.4	Create Urban Non-Motorized Zones	198	SDT-4		LU-3.2.1 & 4.1.4	SDT-1
3.2.5	Incorporate Bike Lane Street Design (on-site)	200	SDT-5		TR-4.1	LUT-9
3.2.6	Provide Bike Parking in Non-Residential Projects	202	SDT-6		TR-4.1	MM T-1
3.2.7	Provide Bike Parking with Multi-Unit Residential Projects	204	SDT-7		TR-4.1.2	MM T-3
3.2.8	Provide Electric Vehicle Parking	205	SDT-8		TR-5.4	MM T-17 & E-11
3.2.9	Dedicate Land for Bike Trails	206	SDT-9		TR-4.1	LUT-9
3.3	Parking Policy/Pricing	207				
3.3.1	Limit Parking Supply	207	PDT-1		LU-1.7 & LU-2.1.1.4	-
3.3.2	Unbundle Parking Costs from Property Cost	210	PDT-2		LU-1.7	-
3.3.3	Implement Market Price Public Parking (On-Street)	213	PDT-3		-	-
3.3.4	Require Residential Area Parking Permits	217	PDT-4		-	PDT-1, PDT-2, PDT-3

Fact Sheets

Section	Category	Page #	Measure #	BMP	MP #	CEQA #
3.4	Commute Trip Reduction Programs	218				
3.4.1	Implement Commute Trip Reduction Program - Voluntary	218	TRT-1	-	-	
	Implement Commute Trip Reduction Program – Required					
3.4.2	Implementation/Monitoring	223	TRT-2		MO-3.1	T-19
3.4.3	Provide Ride-Sharing Programs	227	TRT-3		MO-3.1	-
3.4.4	Implement Subsidized or Discounted Transit Program	230	TRT-4		MO-3.1	-
						TRT-1, TRT-2,
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2.0 Energy

2.1 Building Energy Use

To determine overall reductions, the ratio of building energy associated GHG emissions to the other project categories needs to be determined. This percent contribution to the total is multiplied by the percentage reduction.

2.1.1 Buildings Exceed Title 24 Building Envelope Energy Efficiency Standards By X%¹

(X is equal to the percentage improvement selected by Applicant such as 5%, 10%, or 20%)

Range of Effectiveness:

For a 10% improvement beyond Title 24 the range of effectiveness is:

	Electricity	Natural Gas
Non-residential	0.2 – 5.5%	0.7 – 10%
Residential	0.3 – 2.6%	7.5 – 9.1%

This is dependent on building type and climate zones.

Measure Description:

Greenhouse gases (GHGs) are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, and ventilation². By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

¹ Compliance with Title 24 is determined from the total daily valuation (TDV) of energy use in the built-environment (on a per square foot per year basis). TDV energy use is a parameter that reflects the burden that a building imposes on an electricity supply system. In general, there is a larger electricity demand and, hence, stress on the supply system during the day (peak times) than at night (off peak). Since a TDV analysis requires significant knowledge about the actual building which is not typically available during the CEQA process, the estimate of the energy and GHG savings from an improvement over Title 24 energy use from a TDV basis is proportional to the actual energy use.

² Hardwired lighting is part of Title 24 part 6. However, it is not part of the building envelope energy use and therefore not considered as part of this mitigation measure.

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The energy use of a building is dependent on the building type, size and climate zone it is located in.

The *California Commercial Energy Use Survey (CEUS)* and *Residential Appliance Saturation Survey (RASS)* datasets can be used for these calculations since the data is scalable size and available for several land use categories in different climate zones in California.

The Title 24 standards have been updated twice (in 2005 and 2008) since some of these data were compiled. The California Energy Commission (CEC) has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end user can be used to account for reductions in electricity and natural gas use due to updates to Title 24. Since energy use for each different system type (i.e., heating, cooling, water heating, and ventilation) as well as appliances is defined, this method will also easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Measure Applicability:

- Electricity and natural gas use in residential and commercial buildings subject to California's Title 24 building requirements.
- This measure is part of a grouped measure. To ensure the measure effectiveness, this measure also requires third-party HVAC commissioning and verification of energy savings such as including the results from an alternative compliance model indicating the energy savings.

Inputs:

The following information needs to be provided by the Project Applicant:

- Square footage of non-residential buildings
- Number of dwelling units
- Building/Housing Type
- Climate Zone³
- Total electricity demand (KWh) per dwelling unit or per square feet
- % reduction commitment (over 2008 Title 24 standards)

Baseline Method:

The baseline GHG emissions from electricity and natural gas usage (reflecting 2008 Title 24 standards with no energy-efficient appliances) are calculated as follows:

³ See Figure BE-1.1.

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$$\text{GHG Emissions Baseline}_{\text{Electricity}} = \text{Electricity Intensity}_{\text{baseline}} \times \text{Size} \times \text{Emission Factor}_{\text{Electricity}}$$

$$\text{GHG Emissions Baseline}_{\text{NaturalGas}} = \text{Natural Gas Intensity}_{\text{baseline}} \times \text{Size} \times \text{Emission Factor}_{\text{NaturalGas}}$$

Where:

$$\text{Electricity Intensity}_{\text{baseline}} = \text{Total electricity demand (kWh) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards (calculated based on CEUS and RASS)}^4$$

$$\text{Natural Gas Intensity}_{\text{baseline}} = \text{Total natural gas demand (kBTU or therms) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards (calculated based on CEUS and RASS)}^5$$

$$\text{Emission Factor}_{\text{Electricity}} = \text{Carbon intensity of local utility (CO}_2\text{e/kWh)}^6$$

$$\text{Emission Factor}_{\text{NaturalGas}} = \text{Carbon intensity of natural gas use (CO}_2\text{e/kBTU or CO}_2\text{e/therm)}^7$$

$$\text{Size} = \text{Number of dwelling units or square footage of commercial land uses}$$

Mitigation Method:

$$\text{GHG reduction \%}_{\text{Mitigated_Electricity}} = \text{Reduction}_{\text{Electricity}} \times \text{Reduction Commitment}$$

$$\text{GHG reduction \%}_{\text{Mitigated_NaturalGas}} = \text{Reduction}_{\text{NaturalGas}} \times \text{Reduction Commitment}$$

Where:

$$\text{Reduction} = \text{Applicable reduction based on climate zone, building type, and energy type from Tables BE-1.1 and BE-1.2}$$

$$\text{Reduction Commitment} = \text{Project's reduction commitment beyond 2008 Title 24 standards (expressed as a whole number)}$$

This should be done for each individual building type. If the project involves multiple building types or only a percentage of buildings will have reductions the total for all buildings needs to be determined. This percentage should be applied as follows and summed over all buildings types:

⁴ See Appendix B for baseline inventory calculation methodologies to assist in determining these values.

⁵ See Appendix B for baseline inventory calculation methodologies to assist in determining these values.

⁶ Ibid.

⁷ Ibid.

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$$\sum_i (Reduction \times Commitment) \left(\frac{buildingGHG_i}{TotalGHG_i} \right) (\%BuildingType)$$

- buildingGHG_i* = GHG emissions for specific building type for either electricity or natural gas
- TotalGHG_i* = Total GHG emissions for all buildings for either electricity or natural gas
- i* = electricity or natural gas
- %BuildingType* = portion of building(s) of this type

Tables BE-1.1 and BE-1.2 tabulate the percent reductions from building energy use for each land use type in the various climate zones in California. There is one table for residential land uses and another for non-residential land uses. There is a column for electricity reductions and another for natural gas reductions.

Assumptions:

See Figure BE-1.1 below for a map showing the 16 Climate Zones. Data for some Climate Zones is not presented in the CEUS and RASS studies. However, data from similar Climate Zones is representative and can be used as follows:

For non-residential building types:

- Climate Zone 9 should be used for Climate Zone 11.
- Climate Zone 9 should be used for Climate Zone 12.
- Climate Zone 1 should be used for Climate Zone 14.
- Climate Zone 10 should be used for Climate Zone 15.

For residential building types:

- Climate Zone 2 should be used for Climate Zone 6.
- Climate Zone 1 should be used for Climate Zone 14.
- Climate Zone 10 should be used for Climate Zone 15.

Data based upon the following references:

- CEC. 2009. Residential Compliance Manual for California's 2008 Energy Efficiency Standards. Available online at: http://www.energy.ca.gov/title24/2008standards/residential_manual.html
- CEC. 2009. Nonresidential Compliance Manual for California's 2008 Energy Efficiency Standards. Available online at: http://www.energy.ca.gov/title24/2008standards/nonresidential_manual.html
- CEC. 2004. Residential Appliance Saturation Survey. Available online at: <http://www.energy.ca.gov/appliances/rass/>

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- CEC. 2006. Commercial End-Use Survey. Available online at: <http://www.energy.ca.gov/ceus/>

Emission Reduction Ranges and Variables:

[Refer to Attached Tables BE-1.1 and BE-1.2 for climate zone and land use specific percentages]

This information uses 2008 Title 24 information. To adjust to 2005 Title 24, see Table BE-1.3.

Pollutant	Category Emissions Reductions
CO ₂ e	See Tables BE-1.1 and BE-1.2 for percentage reductions for every 1% improvement over 2008 Title 24.
PM	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
CO	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
SO ₂	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.
NO _x	See Tables BE-1.1 and BE-1.2 for percentage reduction from natural gas. There is no reduction for electricity.

Discussion:

If the applicant selects to commit beyond requirements for 2008 Title 24 standards, the applicant would reduce the amount of GHG emissions associated with electricity generation and natural gas combustion.

Example:

Commercial land use = Large Office

Square footage = 100,000 sq. ft.

Climate Zone = 1

Utility Provider = PG&E

% Reduction Commitment = 10% over 2008 Title 24 Standards

Electricity Intensity_{baseline} = 8.32 kWh/SF/yr (adjusted to reflect 2008 Title 24 standards)

Emission Factor_{Electricity} = 2.08E-4 MT CO₂e/kWh

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$$\begin{aligned} \text{Electricity Emissions}_{\text{baseline}} &= 8.32 \text{ kWh/SF/yr} \times 100,000 \text{ SF} \times (2.08\text{E-}4 \text{ MT CO}_2\text{e/kWh}) \\ &= 173 \text{ MT CO}_2\text{e/yr} \end{aligned}$$

$$\text{Natural Gas Intensity}_{\text{baseline}} = 18.16 \text{ kBtu/SF/yr (adjusted to reflect 2008 Title 24 standards)}$$

$$\text{Emission Factor}_{\text{NaturalGas}} = 5.32\text{E-}5 \text{ MT CO}_2\text{e/therm}$$

$$\begin{aligned} \text{Natural Gas Emissions}_{\text{baseline}} &= 18.16 \text{ kBtu/SF/yr} \times 100,000 \text{ SF} \times (5.32\text{E-}5 \text{ MT CO}_2\text{e/kBtu}) \\ &= 97 \text{ MT CO}_2\text{e/yr} \end{aligned}$$

$$\begin{aligned} \text{GHG emissions}_{\text{baseline}} &= 173 \text{ MT CO}_2\text{e/yr} + 97 \text{ MT CO}_2\text{e/yr} \\ &= 270 \text{ MT CO}_2\text{e/yr} \end{aligned}$$

From Table BE-1.1:

$$\text{Reduction}_{\text{Electricity}} \text{ from 1\% over 2008 Title 24 Standards} = 0.20\%$$

$$\text{Reduction}_{\text{NaturalGas}} \text{ from 1\% over 2008 Title 24 Standards} = 1.00\%$$

$$\text{Reduction in GHG emissions from electricity generation: } 0.20\% \times 10 = 2\%$$

$$\text{Reduction in GHG emissions from natural gas combustion: } 1\% \times 10 = 10\%$$

$$\begin{aligned} \text{Mitigated Building GHG emissions} &= 173 \text{ MT CO}_2\text{e/yr} \times (100\% - 2\%) + \\ &97 \text{ MT CO}_2\text{e/yr} \times (100\% - 10\%) = 257 \text{ CO}_2\text{e/yr} \end{aligned}$$

Preferred Literature:

GHG reductions from a percent improvement over Title 24 can be quantified by calculating baseline energy usage using methodologies based on the California Energy Commission (CEC)'s Residential Appliance Saturation Survey (RASS) and Commercial End-Use Survey (CEUS), or an applicable Alternative Calculation Method (ACM). RASS and CEUS data are based on CEC Forecasting Climate Zones (FCZs); therefore, differences in project energy usage due to different climates are accounted for. The percent improvement is applied to Title 24 built environment energy uses, and overall GHG emissions are calculated using local utility emission factors. This methodology allows the Project Applicant flexibility in choosing which specific measures it will pursue to achieve the percent reductions (for example, installing higher quality building insulation, or installing a more efficient water heating system), while still making the mitigation commitment at the time of California Environmental Quality Act (CEQA) analysis.

Alternative Literature:

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Alternatively, a Project Applicant could use the “prescriptive package” approach to demonstrate compliance with Title 24. Using this approach, the Project Applicant would commit to specific design elements above Title 24 prescriptive package requirements at the time of CEQA analysis, such as using solar water heating or improved insulation. Rather than calculating an overall percent reduction in GHG emissions based on an overall baseline value as presented above, the prescriptive approach requires the Project Applicant to break down building energy use by end-use. The Project Applicant would need to provide substantial evidence supporting the GHG reductions attributable to mitigation measures for each end-use. There are several references for quantifying GHG reductions from prescriptive measures. One example of a prescriptive measure is installing tankless or on-demand water heaters. These systems use a gas burner or electric element to heat water as needed and therefore do not use energy to store heated water. According to the U.S. Department of Energy (USDOE), typical tankless water heaters can be 24-34% more energy efficient than conventional storage tank water heaters [1]. Another example of a prescriptive measure is installing geothermal (ground-source or water-source) heat pumps. This measure takes advantage of the fact that the temperature beneath the ground surface is relatively constant. Fluid circulating through underground pipe loops is either heated or cooled and the heat is either upgraded or reduced in the heat pump depending on whether the building requires heating or cooling [2]. United States Environmental Protection Agency (USEPA) reports that ENERGY STAR - qualified geothermal heat pump systems are 30-45% more efficient than conventional heat pumps [3].

Alternative Literature References:

- [1] USDOE. Energy Savers: Demand (Tankless or Instantaneous) Water Heaters. Accessed February 2010. Available online at:
http://www.energysavers.gov/your_home/water_heating/index.cfm/mytopic=12820
- [2] CEC. Consumer Energy Center: Geothermal or Ground Source Heat Pumps. Accessed February 2010. Available online at:
http://www.consumerenergycenter.org/home/heating_cooling/geothermal.html
- [3] USEPA. ENERGY STAR: Heat Pumps, Geothermal. Accessed February 2010. Available online at:
http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=HP

Other Literature Reviewed:

None

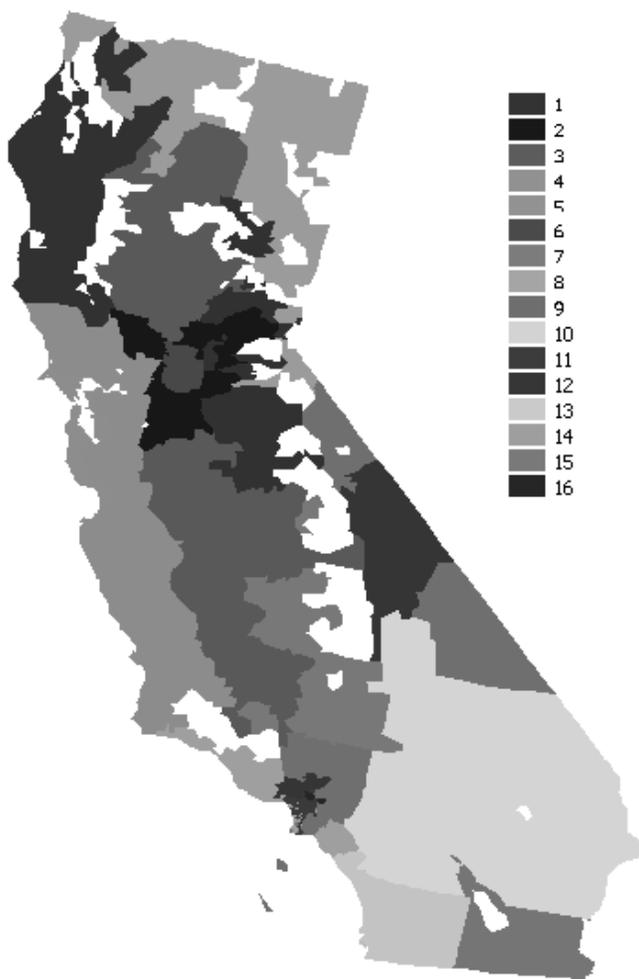
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Figure BE-1.1
CEC Forecast Climate Zones^{8,9}



⁸ Adapted from Figure 2 of CEC. 2004. Residential Appliance Saturation Survey. Available online at: <http://www.energy.ca.gov/appliances/rass/>

⁹ White spaces represent national parks and forests.

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Table BE-1.1
Non-Residential
Reduction for 1% Improvement over 2008 Title 24

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
1	All Commercial	0.22%	0.76%
	All Office	0.36%	1.00%
	All Warehouses	0.02%	0.00%
	College	0.28%	1.00%
	Grocery	0.08%	0.96%
	Health	0.33%	1.00%
	Large Office	0.20%	1.00%
	Lodging	0.30%	1.00%
	Miscellaneous	0.16%	0.91%
	Refrigerated Warehouse	0.02%	0.00%
	Restaurant	0.19%	0.25%
	Retail	0.40%	1.00%
	School	0.26%	0.94%
	Small Office	0.37%	1.00%
Unrefrigerated Warehouse	0.00%	0.00%	
2	All Commercial	0.24%	0.86%
	All Office	0.35%	0.97%
	All Warehouses	0.07%	1.00%
	College	0.45%	1.00%
	Grocery	0.17%	1.00%
	Health	0.35%	0.72%
	Large Office	0.31%	1.00%
	Lodging	0.30%	0.99%
	Miscellaneous	0.22%	1.00%
	Refrigerated Warehouse	0.02%	1.00%
	Restaurant	0.22%	0.38%
	Retail	0.36%	0.97%
	School	0.36%	0.96%
	Small Office	0.38%	0.96%
Unrefrigerated Warehouse	0.12%	1.00%	
3	All Commercial	0.26%	0.66%
	All Office	0.32%	0.98%
	All Warehouses	0.03%	0.95%
	College	0.28%	0.94%
	Grocery	0.14%	0.53%
	Health	0.43%	0.82%
	Large Office	0.34%	0.97%
	Lodging	0.55%	0.73%

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Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Miscellaneous	0.25%	0.82%
	Refrigerated Warehouse	0.02%	1.00%
	Restaurant	0.26%	0.18%
	Retail	0.29%	0.81%
	School	0.33%	0.93%
	Small Office	0.30%	1.00%
	Unrefrigerated Warehouse	0.13%	0.94%
4	All Commercial	0.27%	0.71%
	All Office	0.38%	1.00%
	All Warehouses	0.06%	0.77%
	College	0.37%	0.87%
	Grocery	0.12%	0.75%
	Health	0.45%	0.85%
	Large Office	0.41%	1.00%
	Lodging	0.30%	0.90%
	Miscellaneous	0.20%	0.76%
	Refrigerated Warehouse	0.02%	0.20%
	Restaurant	0.18%	0.30%
	Retail	0.29%	1.00%
	School	0.32%	0.95%
	Small Office	0.30%	1.00%
Unrefrigerated Warehouse	0.10%	0.98%	
5	All Commercial	0.26%	0.72%
	All Office	0.36%	0.95%
	All Warehouses	0.06%	0.46%
	College	0.44%	0.98%
	Grocery	0.09%	0.67%
	Health	0.40%	0.84%
	Large Office	0.37%	0.94%
	Lodging	0.29%	0.81%
	Miscellaneous	0.18%	0.73%
	Refrigerated Warehouse	0.04%	0.29%
	Restaurant	0.11%	0.25%
	Retail	0.24%	0.85%
	School	0.16%	0.91%
	Small Office	0.29%	1.00%
Unrefrigerated Warehouse	0.07%	0.85%	
6	All Commercial	0.31%	0.73%
	All Office	0.38%	0.95%
	All Warehouses	0.07%	0.86%
	College	0.43%	0.99%

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Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Grocery	0.16%	0.64%
	Health	0.46%	0.86%
	Large Office	0.39%	0.94%
	Lodging	0.40%	0.86%
	Miscellaneous	0.25%	0.66%
	Refrigerated Warehouse	0.03%	0.58%
	Restaurant	0.24%	0.35%
	Retail	0.31%	0.83%
	School	0.31%	0.96%
	Small Office	0.34%	1.00%
	Unrefrigerated Warehouse	0.09%	1.00%
	7	All Commercial	0.25%
All Office		0.32%	0.94%
All Warehouses		0.02%	0.64%
College		0.25%	0.99%
Grocery		0.12%	0.90%
Health		0.32%	0.93%
Large Office		0.34%	1.00%
Lodging		0.41%	0.94%
Miscellaneous		0.18%	0.99%
Refrigerated Warehouse		0.02%	0.64%
Restaurant		0.27%	0.19%
Retail		0.34%	0.99%
School		0.29%	0.96%
Small Office		0.31%	0.91%
Unrefrigerated Warehouse	0.00%	0.00%	
8	All Commercial	0.30%	0.62%
	All Office	0.37%	0.94%
	All Warehouses	0.12%	0.99%
	College	0.43%	0.67%
	Grocery	0.14%	0.50%
	Health	0.45%	0.85%
	Large Office	0.38%	0.94%
	Lodging	0.34%	0.86%
	Miscellaneous	0.22%	0.68%
	Refrigerated Warehouse	0.02%	0.93%
	Restaurant	0.27%	0.31%
	Retail	0.28%	0.49%
	School	0.33%	0.92%
	Small Office	0.33%	0.96%
Unrefrigerated Warehouse	0.16%	0.99%	

Energy

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BE-1

Building Energy

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
9	All Commercial	0.28%	0.60%
	All Office	0.39%	0.96%
	All Warehouses	0.13%	0.95%
	College	0.33%	0.98%
	Grocery	0.14%	0.46%
	Health	0.44%	0.85%
	Large Office	0.43%	0.98%
	Lodging	0.37%	0.84%
	Miscellaneous	0.23%	0.76%
	Refrigerated Warehouse	0.03%	0.91%
	Restaurant	0.21%	0.19%
	Retail	0.32%	0.71%
	School	0.32%	0.90%
	Small Office	0.31%	0.94%
Unrefrigerated Warehouse	0.18%	0.96%	
10	All Commercial	0.30%	0.61%
	All Office	0.35%	1.00%
	All Warehouses	0.11%	0.58%
	College	0.27%	1.00%
	Grocery	0.19%	0.67%
	Health	0.46%	0.92%
	Large Office	0.34%	1.00%
	Lodging	0.39%	0.92%
	Miscellaneous	0.24%	0.49%
	Refrigerated Warehouse	0.03%	0.07%
	Restaurant	0.29%	0.29%
	Retail	0.36%	0.87%
	School	0.37%	0.80%
	Small Office	0.36%	1.00%
Unrefrigerated Warehouse	0.15%	0.98%	
13	All Commercial	0.29%	0.66%
	All Office	0.38%	0.80%
	All Warehouses	0.19%	0.95%
	College	0.33%	0.86%
	Grocery	0.11%	0.40%
	Health	0.39%	0.88%
	Large Office	0.41%	0.80%
	Lodging	0.40%	0.82%
Miscellaneous	0.17%	0.39%	

Energy

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BE-1

Building Energy

Climate Zone	Building Types	Reduction	
		Electricity	Natural Gas
	Refrigerated Warehouse	0.07%	1.00%
	Restaurant	0.24%	0.21%
	Retail	0.28%	0.53%
	School	0.31%	0.92%
	Small Office	0.32%	0.76%
	Unrefrigerated Warehouse	0.26%	0.93%

Table BE-1.2
Residential
Reduction for 1% Improvement over 2008 Title 24

Climate Zone	Housing	Reduction	
		Electricity	Natural Gas
1	Multi	0.24%	0.86%
	Single	0.17%	0.87%
	Townhome	0.22%	0.87%
2	Multi	0.15%	0.89%
	Single	0.14%	0.91%
	Townhome	0.11%	0.89%
3	Multi	0.23%	0.90%
	Single	0.18%	0.91%
	Townhome	0.16%	0.90%
4	Multi	0.12%	0.88%
	Single	0.09%	0.91%
	Townhome	0.09%	0.90%
5	Multi	0.09%	0.88%
	Single	0.04%	0.91%
	Townhome	0.05%	0.90%
7	Multi	0.25%	0.87%
	Single	0.16%	0.88%
	Townhome	0.18%	0.85%
8	Multi	0.09%	0.77%
	Single	0.07%	0.82%
	Townhome	0.07%	0.80%
9	Multi	0.08%	0.77%
	Single	0.11%	0.82%
	Townhome	0.09%	0.80%
10	Multi	0.26%	0.80%
	Single	0.18%	0.83%
	Townhome	0.22%	0.81%

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BE-1

Building Energy

11	Multi	0.05%	0.77%
	Single	0.05%	0.83%
	Townhome	0.03%	0.81%
12	Multi	0.15%	0.75%
	Single	0.15%	0.83%
	Townhome	0.13%	0.80%
13	Multi	0.09%	0.79%
	Single	0.06%	0.83%
	Townhome	0.05%	0.81%

Energy

MP# EE-2

BE-2

Building Energy

2.1.2 Install Programmable Thermostat Timers

Range of Effectiveness:

Best Management Practice influences building energy use for heating and cooling.

Measure Description:

Programmable thermostat timers allow users to easily control when the HVAC system will heat or cool a certain space, thereby saving energy. Because most commercial buildings already have timed HVAC systems, this mitigation measure focuses on residential programmable thermostats.

The DOE reports [1] that residents can save around 10% on heating and cooling bills per year by lowering the thermostat by 10-15 degrees for eight hours¹⁰. This can be accomplished using an automatic timer or programmable thermostat, such that the heat is reduced while the residents are at work or otherwise out of the house. The energy savings from a programmable thermostat, however, depend on the user. Some users preset the thermostat to heat the house before they come home, thereby increasing energy usage, while others use it to avoid heating the house when they are not home or asleep. Because of the large variability in individual occupant behavior and because it is unclear whether programmable thermostats systematically reduce energy use, this measure cannot be reasonably quantified. This mitigation measure should be incorporated as a Best Management Practice to allow for educated occupants to have the most efficient means at controlling their heating and cooling energy use. In order to take quantitative credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting a reduction in energy use and associated GHG emissions.

Measure Applicability:

- Electricity use in residential dwellings.
- Best Management Practice only.

Assumptions:

Data based upon the following references:

[1] USDOE. Energy Savers: Thermostats and Control Systems. Available online at:
http://www.energysavers.gov/your_home/space_heating_cooling/index.cfm/mytopic=12720

¹⁰ Such a large drop in thermostat temperatures may not be applicable in parts of California; more applicable may be the raising of the thermostat for airconditioned spaces.

Energy

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BE-2

Building Energy

Emission Reduction Ranges and Variables:

This is a best management practice and therefore at this time there is no quantifiable reduction. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

If substantial evidence was provided, the GHG reductions would equal the percent savings in total electricity or natural gas. The total reduction would be:

$$\text{GHG reduction} = (\% \text{ thermostat reduce heat/cool energy use}) \times (\% \text{ end use heat/cool of total energy use})$$

Preferred Literature:

The DOE reports [1] that residents can save approximately 10% on heating and cooling bills per year by lowering the thermostat by 10-15 degrees for eight hours. This can be accomplished using an automatic timer or programmable thermostat, such that the heat is reduced while the residents are at work or otherwise out of the house. The energy savings from a programmable thermostat, however, depend on the user. Some users preset the thermostat to heat the house before they come home, thereby increasing energy usage, while others use it to avoid heating the house when they are not home or asleep.

Alternative Literature:

None

Other Literature Reviewed:

Pacific Northwest National Laboratory. 2007. GridWise Demonstration Project Fast Facts. Available online at: http://gridwise.pnl.gov/docs/pnnl_gridwiseoverview.pdf.

Energy

MP# EE-2

BE-3

Building Energy

2.1.3 Obtain Third-party HVAC Commissioning and Verification of Energy Savings

Range of Effectiveness:

Not applicable on its own. This measure enhances effectiveness of BE-1.

Measure Description:

Ensuring the proper installation and construction of energy reduction features is essential to achieving high thermal efficiency in a house. In practice, HVAC systems commonly do not operate at the designed efficiency due to errors in installation or adjustments. A Project Applicant can obtain HVAC commissioning and third-party verification of energy savings in thermal efficiency components including HVAC systems, insulation, windows, and water heating.

This measure is required to be grouped with measure "Exceed Title 24 Energy Efficiency Standards by X% (BE-1).

Measure Applicability:

- This measure is part of a grouped measure. This measure also requires third-party HVAC commissioning and verification of energy savings.
- Buildings subject to California's Title 24 building requirements.

Preferred Literature:

While Title 24 requires that a home's ducts be tested for leaks whenever the central air conditioner or furnace is installed or replaced, a third-party verifier such as the California Home Energy Efficiency Rating Service (CHEERS) and ENERGY STAR Home Energy Rating Service (HERS) can ensure that ducts were properly sealed [1-3]. These certified raters can also verify other energy efficiency measures, such as HVAC controls, insulation performance, and the air-tightness of the building envelope. Furthermore, these raters can analyze a home and make climate-specific recommendations for further improving the home's energy efficiency. Since this mitigation measure ensures that the building envelope systems are properly installed and sealed, there is no quantifiable reduction for this measure. It is recommended as a Best Management Practice grouped with the Title 24 improvement mitigation measure.

Alternative Literature:

None

Literature References:

- [1] California Home Energy Efficiency Rating Services. What is CHEERS? Available online at: <http://www.cheers.org/Home/Overview/tabid/124/Default.aspx>. Accessed March 2010.



Energy

MP# EE-2

BE-3

Building Energy

- [2] USEPA. ENERGY STAR: Features of ENERGY STAR Qualified New Homes. Available online at: http://www.energystar.gov/index.cfm?c=new_homes.nh_features. Accessed March 2010.
- [3] USEPA. ENERGY STAR: Independent Inspection and Testing. Available online at: http://www.energystar.gov/ia/new_homes/features/HERSrater_062906.pdf. Accessed March 2010.

Energy

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MP# EE-2.1.6

BE-4

Building Energy

2.1.4 Install Energy Efficient Appliances

Range of Effectiveness:

Residential 2-4% GHG emissions from electricity use. Grocery Stores: 17-22% of GHG emissions from electricity use.

Measure Description:

Using energy-efficient appliances reduces a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production. To take credit for this mitigation measure, the Project Applicant (or contracted builder) would need to ensure that energy efficient appliances are installed. For residential dwellings, typical builder-supplied appliances include refrigerators and dishwashers. Clothes washers and ceiling fans would be applicable if the builder supplied them. For commercial land uses, energy-efficient refrigerators have been evaluated for grocery stores. See Mitigation Method section on how project applicant may quantify additional building types and appliances.

The energy use of a building is dependent on the building type, size and climate zone it is located in. The *California Commercial Energy Use Survey (CEUS)* and *Residential Appliance Saturation Survey (RASS)* datasets for this calculation since the data is scalable by size and available for several land use categories in different climate zones in California. Typical reductions for energy-efficient appliances can be found in the *Energy Star and Other Climate Protection Partnerships 2008 Annual Report* or subsequent Annual Reports. ENERGY STAR refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively.

RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the Miscellaneous category which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from the National Renewable Energy Laboratory (NREL) Building American Research Benchmark Definition (BARBD) is used. BARBD reports that the average energy use per ceiling fan is 84.1 kWh per year. In this mitigation measure, it is assumed that each multi-family, single-family, and townhome residence has one ceiling fan. The electricity savings shown here is based on installing an ENERGY STAR ceiling fan and does not account for an occupant's decreased use of cooling devices such as air conditioners. For ceiling fans, the 50% reduction was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category.

Measure Applicability:

- Electricity use in residential dwellings and commercial grocery stores.
- This mitigation measure applies only when appliance installation can be specified as part of the Project.

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BE-4

Building Energy

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of dwelling units and/or size of grocery store
- Climate Zone
- Housing Type (if residential)
- Utility provider
- Total natural gas demand (kBtu or therms) per dwelling unit or per square foot
- Types of energy efficient appliances to be installed (refrigerator, dishwasher, or clothes washer for residential land uses and refrigerators for grocery stores)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity Intensity}_{\text{baseline}} \times \text{Size} \times \text{Emission Factor}_{\text{Electricity}} + \text{Natural Gas Intensity}_{\text{baseline}} \times \text{Size} \times \text{Emission Factor}_{\text{NaturalGas}}$$

Where:

GHG emissions = MT CO₂e (reflecting 2008 Title 24 standards with no energy-efficient appliances)

Electricity Intensity_{baseline} = Total electricity demand (kWh) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards¹¹

Natural Gas Intensity_{baseline} = Total natural gas demand (kBtu or therms) per dwelling unit or per square foot; provided by applicant and adjusted for 2008 Title 24 standards¹²

Emission Factor_{Electricity} = Carbon intensity of local utility (CO₂e/kWh)¹³

Emission Factor_{NaturalGas} = Carbon intensity of natural gas use (CO₂e/kBtu or CO₂e/therm)¹⁴

Size = Number of dwelling units or square footage of commercial land uses

Mitigation Method:

$$\text{GHG emissions}_{\text{mitigated}} = \text{Electricity Emissions}_{\text{baseline}} \times (1 - (\text{Sum of Reductions})) +$$

¹¹ See Appendix B for baseline inventory calculation methodologies to assist in determining these values.

¹² Ibid

¹³ Ibid.

¹⁴ Ibid.

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	Natural Gas Emissions _{baseline}
Where:	
Electricity Emissions _{baseline}	= Emissions due to electricity generation, adjusted for 2008 Title 24 Standards (calculated based on CEUS and RASS)
Sum of Reductions	= Applicable reduction based on energy efficient appliances installed (expressed as a decimal)
Natural Gas Emissions _{baseline}	= Emissions due to natural gas combustion, adjusted for 2008 Title 24 Standards (calculated based on CEUS and RASS)
Building GHG reduction Percentage =	[GHG emissions mitigated/GHG emissions baseline]

Tables BE-4.1 and BE-4.2 tabulate the percent reductions from installing specific ENERGY STAR appliances for each land use type in the various climate zones in California. There is one table for residential land uses and another for non-residential land uses. This will only result in reductions associated with electricity use and does not apply to natural gas since there are no major Energy Star appliances that use natural gas. The energy efficient heating, cooling, and water heating systems that may use natural gas are included in improvements over Title 24 (see measure BE-1).

For other building types and energy efficient appliances, the reductions similar to those in the tables can be quantified as follows:

$$\text{Reduction} = (\text{Appliance End Use } \%) \times (1 - \text{efficiency})$$

Where:

Appliance End Use %	=	portion of energy for this appliance compared to total electricity use
Efficiency	=	percent reduction in energy use for efficient appliance compared to standard.

Assumptions:

Data for some Climate Zones is not presented in the CEUS and RASS studies. However, data from similar Climate Zones is representative and can be used as follows:

For non-residential building types:
Climate Zone 9 should be used for Climate Zone 11.
Climate Zone 9 should be used for Climate Zone 12.

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Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.
For residential building types:
Climate Zone 2 should be used for Climate Zone 6.
Climate Zone 1 should be used for Climate Zone 14.
Climate Zone 10 should be used for Climate Zone 15.

Data based upon the following references:

- [1] USEPA. 2008. ENERGY STAR 2008 Annual Report. Available online at:
<http://www.epa.gov/cpd/annualreports/annualreports.htm>
- [2] CEC. 2004. Residential Appliance Saturation Survey. Available online at:
<http://www.energy.ca.gov/appliances/rass/>
- [3] CEC. 2006. Commercial End-Use Survey. Available online at:
<http://www.energy.ca.gov/ceus/>
- [4] NREL. 2010. Building America Research Benchmark Definition. Available online at:
<http://www.nrel.gov/docs/fy10osti/47246.pdf>

Emission Reduction Ranges and Variables:

[Refer to Attached Tables BE-4.1 and BE-4.2 for climate zone and land use specific percentages]

If more than one type of appliance is considered the percentage for each appliance should be added together.

Pollutant	Category Emissions Reductions
CO ₂ e	See Tables BE-4.1 and BE-4.2 for percentage reductions.
PM	Not Quantified ¹⁵
CO	Not Quantified
SO ₂	Not Quantified
NOx	Not Quantified

Discussion:

If the applicant commits to installing energy efficient appliances, the applicant would reduce the amount of GHG emissions associated with electricity generation because

¹⁵ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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more energy efficient appliances will require less electricity to run. This reduces GHG emissions from power plants.

Example:

Housing Type = Single Family Home

Number of Dwelling Units = 100

Climate Zone = 1

Utility Provider = PG&E

Energy efficient appliances to be installed = refrigerator and dishwasher

Electricity Intensity_{baseline} = 7,196 kWh/DU/yr (adjusted to reflect 2008 Title 24 standards)

Emission Factor_{Electricity} = 2.08E-4 MT /kWh

Electricity Emissions_{baseline} = 7,196 kWh/DU/yr x 100 DU x (2.08E-4 MT CO₂e/kWh)
= 150 MT CO₂e/yr

Natural Gas Intensity_{baseline} = 365 therms/DU/yr (adjusted to reflect 2008 Title 24 standards)

Emission Factor_{NaturalGas} = 5.32E-3 MT CO₂e/kBTU

Natural Gas Emissions_{baseline} = 365 therm/DU/yr x 100 DU x (5.32E-3 MT CO₂e/therm)
= 194 MT CO₂e/yr

GHG emissions_{baseline} = 150 MT CO₂e/yr + 194 MT CO₂e/yr
= 344 MT CO₂e/yr

Sum of Reductions associated with electricity generation from Table BE-4.2 = 2.05%

Reductions associated with natural gas combustion = 0%

GHG emissions_{mitigated} = 150*(1-.0205) + 194
= 341

Building GHG reduction = 1 - 341 / 344 = 0.9%

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Preferred Literature:

The USEPA ENERGY STAR Program has identified energy efficient residential and consumer appliances including air conditioners, refrigerators, freezers, clothes washers, dishwashers, fryers, steamers, and vending machines. The ENERGY STAR Annual Report presents the average percent energy savings from using an ENERGY STAR-qualified appliance instead of a standard appliance. GHG emissions reductions are calculated based on local utility emission factors and the baseline appliance energy use derived from the CEC RASS and CEUS methodologies. RASS and CEUS data are climate-specific; therefore, differences in project energy usage due to different climates are accounted for.

Alternative Literature:

None

Other Literature Reviewed:

None

Table BE-4.1
Non-Residential
Reduction for ENERGY STAR Refrigerators in Grocery Stores

Climate Zone	Electricity Reduction
1	20%
2	17%
3	18%
4	21%
5	22%
6	19%
7	18%
8	19%
9	20%
10	18%
13	21%

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BE-4

Building Energy

Table BE-4.2
Residential
Reduction for ENERGY STAR Appliances

Climate Zone	Housing	Refrigerator ^{1,3}	Clothes Washer ^{1,3}	Dishwasher ^{1,3}	Ceiling Fan ^{2,3}
		Total Electricity Reduction			
1	Multi	2.59%	0.03%	0.10%	1.01%
	Single	1.72%	0.50%	0.12%	0.58%
	Townhome	2.28%	0.28%	0.11%	0.83%
2	Multi	2.86%	0.03%	0.11%	1.12%
	Single	1.79%	0.53%	0.13%	0.61%
	Townhome	2.61%	0.32%	0.13%	0.96%
3	Multi	2.62%	0.03%	0.10%	1.02%
	Single	1.69%	0.50%	0.12%	0.58%
	Townhome	2.44%	0.30%	0.12%	0.89%
4	Multi	2.97%	0.03%	0.12%	1.16%
	Single	1.90%	0.56%	0.14%	0.65%
	Townhome	2.64%	0.33%	0.13%	0.97%
5	Multi	3.07%	0.03%	0.12%	1.20%
	Single	1.99%	0.58%	0.14%	0.68%
	Townhome	2.78%	0.35%	0.14%	1.02%
7	Multi	2.54%	0.03%	0.10%	0.99%
	Single	1.74%	0.51%	0.12%	0.59%
	Townhome	2.39%	0.30%	0.12%	0.88%
8	Multi	3.08%	0.03%	0.12%	1.20%
	Single	1.94%	0.57%	0.14%	0.66%
	Townhome	2.71%	0.34%	0.14%	0.99%
9	Multi	3.13%	0.03%	0.12%	1.22%
	Single	1.85%	0.54%	0.13%	0.63%
	Townhome	2.65%	0.33%	0.13%	0.97%
10	Multi	2.52%	0.03%	0.10%	0.98%
	Single	1.71%	0.50%	0.12%	0.58%
	Townhome	2.27%	0.28%	0.11%	0.83%
11	Multi	3.21%	0.03%	0.13%	1.25%
	Single	1.97%	0.58%	0.14%	0.67%
	Townhome	2.83%	0.35%	0.14%	1.04%
12	Multi	2.89%	0.03%	0.11%	1.13%
	Single	1.76%	0.51%	0.13%	0.60%
	Townhome	2.53%	0.32%	0.13%	0.93%
13	Multi	3.09%	0.03%	0.12%	1.21%
	Single	1.95%	0.57%	0.14%	0.66%
	Townhome	2.76%	0.34%	0.14%	1.01%

Notes:

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BE-4

Building Energy

1. Percent reductions are based on the saturation values presented in RASS. The Project Applicant may use project-specific saturation values (i.e. if 100% of homes have clothes washers, then saturation = 1).

Notes:

2. CEC's RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the Miscellaneous category, which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not specified, a value from NREL's BARBD was used. BARBD reports that the average energy use per ceiling fan is 84.1 kWh per year. In this table, it is assumed that each multi-family, single-family, and townhome residence has one ceiling fan. The electricity savings shown here is based on installing an ENERGY STAR ceiling fan and does not account for an occupant's decreased use of cooling devices such as air conditioners.

3. Total electricity reduction is based on installing ENERGY STAR appliances instead of standard appliances. ENERGY STAR refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively. For ceiling fans, the 50% reduction was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category.

Abbreviations:

BARBD - Building America Research Benchmark Definition

CEC - California Energy

Commission

NREL - National Renewable Energy Laboratory

RASS - Residential Appliance Saturation Survey

USEPA - United States Environmental Protection Agency

Sources:

CEC. 2004. Residential Appliance Saturation Survey. Available online at:
<http://www.energy.ca.gov/appliances/rass/>

NREL. 2010. Building America Research Benchmark Definition. Available online at:
<http://www.nrel.gov/docs/fy10osti/47246.pdf>

USEPA. 2008. ENERGY STAR 2008 Annual Report. Available online at:
<http://www.epa.gov/cpd/annualreports/annualreports.htm>

Energy

BE-5

Building Energy

2.1.5 Install Energy Efficient Boilers

Range of Effectiveness: 1.2-18.4% of boiler GHG emissions

Measure Description:

Boilers are used in many non-residential and multi-family housing buildings to provide space heating or steam or facility operations. Boilers combust natural gas to produce steam which can be used directly or as a method to heat a building space. Boilers represent 12% of installed building heating equipment for commercial and other buildings. Boiler efficiencies are regulated and commonly presented as annualized fuel utilization efficiency (AFUE), a ratio of the total useful heat delivered to the heat value from the annual amount of fuel consumed. Improving boiler efficiency decreases natural gas consumption for the same amount of energy output, thus reducing GHG emissions.

Only natural gas boilers are considered under this mitigation measure. The Project Applicant would only need to provide the annual natural gas consumptions to calculate the baseline emissions using heat content and carbon intensity factors from CCAR [3]. To determine the emission reduction, boiler efficiency is also needed, and should be obtainable from manufacturer specifications. The Consortium for Energy Efficiency (CEE) reports that the rate of high efficiency boilers ($\geq 85\%$) has gone from 5-15% of sales in 2002 to 50%-60% of sales in 2007 [2]. The CEE study also noted that technical improvements can be made to existing boiler types to improve efficiency to 88%. Efficiency can be further enhanced to up to 98% using the condensing boiler.

A range of efficiencies from the CEE study has been presented for reference, but to take credit for this mitigation measure, the Project Applicant would also need to provide evidence from manufacturers supporting the higher efficiency from a retrofit or new boiler.

Measure Applicability:

- Natural Gas Boilers

Inputs:

The following information needs to be provided by the Project Applicant:

- Natural gas consumption of boiler
- Original or baseline efficiency of boiler
- Improved efficiency of boiler

Baseline Method:

$$\text{Emission} = \text{Consumption} \times \text{HC} \times \text{EF} \times \text{C}$$

Where:

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Emission = MT CO₂e
 Consumption = Natural gas consumption (ft³)
 HC = Natural gas heat content = 1,029 BTU/ft³ (CCAR 2009)
 EF = Natural gas carbon intensity factor = 0.1173 lbs CO₂e/kBTU (CCAR 2009)
 C = Unit conversion factor
 In this case, C = 4.54x10⁻⁷ kBTU x MT/BTU/lbs

Mitigation Method:

The GHG emission from a boiler with improved efficiency is:

$$\text{Mitigated GHG Emission} = \text{Consumption} \times \frac{E_o}{E_i} \times \text{HC} \times \text{EF} \times C$$

Where:

Emission = MT CO₂e
 Consumption = Natural gas consumption (ft³)
 E_o = Original efficiency of boiler
 E_i = Improved efficiency of boiler
 HC = Natural gas heat content = 1,029 BTU/ft³ (CCAR 2009)
 EF = Natural gas carbon intensity factor = 0.1173 lbs CO₂e/kBTU (CCAR 2009)
 C = Unit conversion factor

Emission Reduction Ranges and Variables:

Percentage of emissions reduction using a boiler with improved efficiency for all pollutants are the same and is calculated as follows:

$$\text{Reduction} = 1 - \frac{E_o}{E_i}$$

Where:

E_o = Original efficiency of boiler
 E_i = Improved efficiency of boiler

Technology	Range of Efficiencies	Range of Emission Reduction
Atmospheric	80 – 84%	-
Fan assisted, non-condensing	85 – 88%	1.2% – 9.1%
Fan assisted, condensing	88 – 98%	4.5% – 18.4%

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Discussion:

Boiler efficiency is included in product specification from manufacturer. ENERGY STAR boilers require minimum efficiency of 85%. The Consortium for Energy Efficiency (CEE) reports natural efficiency breakpoints of 85-88% for fan assisted, non-condensing commercial boilers, and 88-98% for fan assisted, condensing boilers.

Assumptions:

Data based upon the following references:

- California Climate Action Registry 2009. General Reporting Protocol, Version 3.1. Available at: http://www.climateactionregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf
- Energy Star. Boilers key Product Criteria. Available at: http://www.energystar.gov/index.cfm?c=boilers.pr_crit_boilers
- Science Applications International Corporation 2009. Prepared for California Climate Action Registry. Development of Issue Papers for GHG Reduction Project Types: Boiler Efficiency Projects. Available at: http://www.climateactionreserve.org/wp-content/uploads/2009/03/future-protocol-development_boiler-efficiency.pdf

Preferred Literature:

Boilers represent 12% of installed building heating equipment. Boiler efficiencies are regulated and commonly presented as annualized fuel utilization efficiency (AFUE), a ratio of the total useful heat delivered to the heat value from the annual amount of fuel consumed. The Climate Action Registry (CAR) Boiler Efficiency Projects estimated potential annual CO₂e emission reductions of 22,673,929 and 6,584,231 MT for commercial and residential boilers, respectively, from boiler efficiency improvement from 77% to 83% [1]. The Consortium for Energy Efficiency (CEE) reports that the rate of high efficiency boilers (≥ 85%) has gone from 5-15% of sales in 2002 to 50%-60% of sales in 2007 [2]. The CEE study also noted that technical improvements can be made to existing boiler types to improve efficiency to 88%. Efficiency can be further enhanced to up to 98% using the condensing boiler.

Only natural gas boilers are considered under this mitigation measure. The Project Applicant would only need to provide the annual natural gas consumptions to calculate the baseline emissions using heat content and carbon intensity factors from CCAR [3]. To determine the emission reduction, boiler efficiency is also needed, and should be obtainable from manufacturer specifications. A range of efficiencies from the CEE study has been presented for reference, but to take credit for this mitigation measure, the Project Applicant would also need to provide evidence from manufacturers supporting the higher efficiency from a retrofit or new boiler.

Energy

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Building Energy

Alternative Literature:

None

Notes:

- [1] Science Applications International Corporation 2009. Prepared for Climate Action Registry (CAR). Development of Issue Papers for GHG Reduction Project Types: Boiler Efficiency Projects. Available at: http://www.climateactionreserve.org/wp-content/uploads/2009/03/future-protocol-development_boiler-efficiency.pdf
- [2] Consortium of Energy Efficiency (CEE) Winter Program Meeting 2008. Market Characterization of Commercial Gas Boilers.
- [3] CCAR 2009. General Reporting Protocol, Version 3.1. Available at: http://www.climateactionreserve.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

Other Literature Reviewed:

None

Energy

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LE-1

Lighting

2.2 Lighting

2.2.1 Install Higher Efficacy Public Street and Area Lighting

Range of Effectiveness:

16-40% of outdoor lighting

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Public street and area lighting includes streetlights, pedestrian pathway lights, area lighting for parks and parking lots, and outdoor lighting around public buildings. Lighting design should consider the amount of light required for the area intended to be lit. Lumens are the measure of the amount of light perceived by the human eye. Different light fixtures have different efficacies or the amount of lumens produced per watt of power supplied. This is different than efficiency, and it is important that lighting improvements are based on maintaining the appropriate lumens per area when applying this measure. Installing more efficacious lamps will use less electricity while producing the same amount of light, and therefore reduces the associated indirect GHG emissions.

Measure Applicability:

- Public street and area lighting

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of lighting heads (for baseline only)
- Power rating of public street and area lights
- Carbon intensity of local utility (for baseline only)

Baseline Method:

$$\text{GHG emissions} = \text{Heads} \times \text{Hours} \times \text{Days} \times \text{Power}_{\text{baseline}} \times \text{Utility}$$

Where:

- GHG emissions = MT CO₂e/yr
- Heads = Number of public street and area lighting heads. Provided by Applicant.
- Hours = Hours of operation per day (12).
- Days = Days of operation per year (365).
- Power_{baseline} = Power rating of public street and area lights (kW).
- Utility = Carbon intensity of Local Utility (CO₂e/kWh)

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LE-1

Lighting

Mitigation Method:

The minimum reduction in annual energy cost associated with higher efficacy street lighting systems is 16%. Note that a 16% reduction in power rating and GHG emissions is the estimated minimum percent reduction associated with installing higher efficacy public street and area lighting. NYSERDA reports that a 16% reduction is expected for installing metal halide post top lights as opposed to typical mercury cobrahead lights. The percent reduction is expected to increase to 35% for installing metal halide cobrahead or metal halide cutoff lights, and 40% for installing high pressure sodium cutoff lights. For lights operating with a single local utility district, the 16% energy cost reduction is equivalent to a 16% reduction in power rating because the energy cost comparison assumes an equal number of lighting heads and equal operation times. As all other variables remain equal between the baseline and mitigated scenarios, the reduction in GHG emissions is in turn 16%. Therefore, the reduction in GHG emissions associated with installing higher efficacy public street and area lighting is:

$$\text{GHG emission reduction} = \frac{\text{Power}_{\text{baseline}} - \text{Power}_{\text{mitigated}}}{\text{Power}_{\text{baseline}}} = 16\%$$

Where:

- GHG emission reduction = Percentage reduction in GHG emissions for public street and area lighting.
- $\text{Power}_{\text{baseline}}$ = Power rating of public street and area lights (kW).
- $\text{Power}_{\text{mitigated}}$ = Power rating of public street and area lights (kW).

If different types of lampheads result in less heads needing to be installed, the reduction will be as follows:

$$\frac{\text{Head}_{\text{baseline}} \times \text{Power}_{\text{baseline}} - \text{Head}_{\text{mitigated}} \times \text{Power}_{\text{mitigated}}}{\text{Head}_{\text{baseline}} \times \text{Power}_{\text{baseline}}}$$

Where:

- $\text{Head}_{\text{baseline}}$ = the number of heads in the baseline scenario
- $\text{Power}_{\text{baseline}}$ = the number of heads in the mitigated scenario

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Note that a 16% reduction in power rating and GHG emissions is the estimated minimum percent reduction associated with installing higher efficacy public street and

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area lighting. NYSERDA reports that a 16% reduction is expected for installing metal halide post top lights as opposed to typical mercury cobrahead lights. The percent reduction is expected to increase to 35% for installing metal halide cobrahead or metal halide cutoff lights, and 40% for installing high pressure sodium cutoff lights.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	16% for installing metal halide post top lights; 35% for installing metal halide cobrahead or cutoff lights; 40% for installing high pressure sodium cutoff lights
All other pollutants	Not Quantified ¹⁶

Discussion:

If the applicant uses public street and area lighting, they would calculate baseline emissions as described in the baseline methodologies section. If the applicant then selects to mitigate public street and area lighting by committing to higher efficacy options, the applicant would reduce the amount of GHG emissions associated with public street and area lighting by 16%.

GHG Emissions Reduced = 16%

Assumptions:

Data based upon the following reference:

- [1] New York State Energy Research and Development Authority (NYSERDA). 2002. NYSERDA How-to Guide to Effective Energy-Efficient Street Lighting for Municipal Elected/Appointed Officials.

Preferred Literature:

The New York State Energy Research and Development Authority (NYSERDA)'s 2002 How-to Guide to Effective Energy-Efficient Street Lighting reports a minimum reduction in electricity demand of 16% due to the installation of energy-efficient street lights such as metal halide and high-pressure sodium models (see page 4).

Alternative Literature:

None

Other Literature Reviewed:

¹⁶ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.



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Lighting

[2] The University of Rochester. Light-Emitting Diode (LED), Organic Light-Emitting Diode (OLED), and laser research for lighting applications. Homepage available online at: <http://www.rochester.edu/research/sciences.html>. Accessed February 2010.

[3] Chittenden County Regional Planning Commission. 1996. Outdoor Lighting Manual for Vermont Municipalities.

Energy

MP# EE-2.3

LE-2

Lighting

2.2.2 Limit Outdoor Lighting Requirements

Range of Effectiveness:

Best Management Practice, but may be quantified.

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. When the operational hours of a light are reduced, GHG emissions are reduced. Strategies for reducing the operational hours of lights include programming lights in public facilities (parks, swimming pools, or recreational centers) to turn off after-hours, or installing motion sensors on pedestrian pathways. Since literature guidance for quantifying these reductions does not exist, this mitigation measure would be employed as a Best Management Practice. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial documentation of the reduction in operational hours of lights.

Measure Applicability:

- Outdoor lighting
- Best Management Practice unless Project Applicant supplies substantial evidence.

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of outdoor lights
- Power rating of outdoor lights
- Carbon intensity of local utility (for baseline only)
- Limited hours of operation of outdoor lights

Baseline Method:

$$\text{GHG emissions} = \text{Heads} \times \text{Hours} \times \text{Power}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO₂e/yr

Heads = Number of outdoor lighting heads. Provided by Applicant.

Hours = Annual hours of operation (4,280)¹⁷.

Power_{baseline} = Power rating of outdoor lights (kW).

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

¹⁷ Estimated based on the annual number of dark hours (hours between sunset and sunrise) for Los Angeles, California.

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MP# EE-2.3

LE-2

Lighting

Mitigation Method:

Limiting the hours of operation of outdoor lights in turn limits the indirect GHG emissions associated with their electricity usage. Therefore, the reduction in GHG emissions associated with limiting outdoor lighting is:

$$\text{GHG emission reduction} = \frac{\text{Hours}_{\text{baseline}} - \text{Hours}_{\text{limited}}}{\text{Hours}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor lighting.

Hours_{baseline} = Annual hours of operation (4,280).

Hours_{limited} = Limited hours of operation per day. Provided by Applicant.

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

This is a best management practice measure unless the Project Applicant supplies substantial evidence justifying a reduction in hours of operation. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Pollutant	Category Emissions Reductions
CO ₂ e	0 to 100%
All other pollutants	Not Quantified ¹⁸

Discussion:

If the applicant uses outdoor lighting, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate outdoor lighting by limiting operation to 10 hours per day, the applicant would reduce the amount of GHG emissions associated with outdoor lighting by 20%.

$$\text{GHG Emissions Reduced} = \frac{12 - 10}{10} = 0.20 \text{ or } 20\%$$

Assumptions:

¹⁸ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.



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MP# EE-2.3

LE-2

Lighting

None

Preferred Literature:

None

Other Literature Reviewed:

None

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MP# EE-2.1.5

LE-3

Lighting

2.2.3 Replace Traffic Lights with LED Traffic Lights

Range of Effectiveness:

90% of emissions associated with existing traffic lights.

Measure Description:

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Installing higher efficiency traffic lights reduces energy demand and associated GHG emissions. As high efficiency light-emitting diodes (LEDs), which consume about 90% less energy than traditional incandescent traffic lights while still providing adequate light or lumens when viewed, are currently required to meet minimum federal efficiency standards for new traffic lights. Project Applicants may take credit only if they are retrofitting existing incandescent traffic lights.

Measure Applicability:

- Traffic lighting – retrofitting incandescent traffic lights

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of incandescent traffic lights being retrofitted
- Power rating of incandescent traffic lights being retrofitted
- Carbon intensity of local utility (for baseline only)

Baseline Method:

$$\text{GHG emissions} = \text{Lights} \times \text{Hours} \times \text{Days} \times \text{Power}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions= MT CO₂e/yr

Lights = Number of incandescent traffic lights being retrofitted. Provided by Applicant.

Hours = Hours of operation per day (24).

Days = Days of operation per year (365).

Power_{baseline} = Power rating of incandescent traffic lights being retrofitted (kW).

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

Traffic lights using LEDs consume about 90% less power than traditional incandescent traffic lights. Therefore, the reduction in GHG emissions associated with replacing incandescent traffic lights with LED-based traffic lights is:

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Lighting

$$\text{GHG emission reduction} = \frac{\text{Power}_{\text{baseline}} - \text{Power}_{\text{mitigated}}}{\text{Power}_{\text{baseline}}} = 90\%$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for traffic lighting.

Power_{baseline} = Power rating of incandescent traffic lights (kW).

Power_{mitigated} = Power rating of LED traffic lights (kW).

As it can be seen by this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	90%
All other pollutants	Not Quantified ¹⁹

Discussion:

If the applicant uses traffic lights, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate traffic lights by committing to replacing all existing incandescent traffic lights with LED traffic lights, the applicant would reduce the amount of GHG emissions associated with traffic lights in an existing area by 90%.

GHG Emissions Reduced = 90%

Assumptions:

Data based upon the following references:

[1] USDOE. 2004. NREL. State Energy Program Case Studies: California Says "Go" to Energy-Saving Traffic Lights. Available online at:
<http://www.nrel.gov/docs/fy04osti/35551.pdf>

[2] USEPA. ENERGY STAR: Traffic Signals. Available online at:
http://www.energystar.gov/index.cfm?c=traffic.pr_traffic_signals. Accessed February 2010.

¹⁹ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.



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LE-3

Lighting

Preferred Literature:

NREL reports that traffic lights based on light-emitting diodes (LEDs) consume about 90% less power than traditional incandescent traffic lights. All traffic lights manufactured on or after January 1, 2006 must meet minimum federal efficiency standards, which are consistent with ENERGY STAR specifications for LED traffic lights.

Alternative Literature:

None

Other Literature Reviewed:

[3] The University of Rochester. LED, OLED, and laser research for lighting applications. Homepage available online at: <http://www.rochester.edu/research/sciences.html>. Accessed February 2010.

Energy

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AE-1

Alternative Energy

2.3 Alternative Energy Generation

2.3.1 Establish Onsite Renewable or Carbon-Neutral Energy Systems-Generic

Range of Effectiveness:

0-100% of emissions associated with electricity use. Note some systems could increase energy use.

Measure Description:

Using electricity generated from renewable or carbon-neutral power systems displaces electricity demand which would ordinarily be supplied by the local utility. Different sources of electricity generation that local utilities use have varying carbon intensities. Renewable energy systems such as fuel cells may have GHG emissions associated with them. Carbon-neutral power systems, such as photovoltaic panels, do not emit GHGs and will be less carbon intense than the local utility. This mitigation measure describes a method to calculate GHG emission reductions from displacing utility electricity with electricity generated from an on-site power system, which may incorporate technology which has not yet been established at the time this document was written.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total annual electricity demand (kWh)
- Annual amount of electricity to be provided by the on-site power system (kWh) or percent of total electricity demand to be provided by the on-site power system (%)
- Carbon intensity of local utility and on-site power system if not carbon neutral

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

$$\text{GHG emissions} = \text{MT CO}_2\text{e}$$

$$\text{Electricity}_{\text{baseline}} = \text{Total electricity demand (kWh)} \\ \text{Provided by Applicant}$$

$$\text{Utility} = \text{Carbon intensity of Local Utility (CO}_2\text{e/kWh)}$$

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Mitigation Method:

If the total amount of electricity to be provided by the carbon-neutral power system is known, then the GHG emission reduction is equivalent to the ratio of electricity from the carbon-neutral power system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{carbon-neutral}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for electricity use

Electricity_{carbon-neutral} = Electricity to be provided by the carbon-neutral power system (kWh)

Electricity_{baseline} = Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the carbon-neutral power system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions for carbon neutral systems.

If the total amount of electricity to be provided by a renewable energy system that is not carbon neutral, then the GHG emission reduction is equivalent to the following equation:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{renewable}}}{\text{Electricity}_{\text{baseline}}} \times \frac{(\text{Utility} - \text{Renewable})}{\text{Utility}}$$

Where

Electricity_{renewable} = Electricity provided by renewable power system (kWh)

Renewable = Carbon intensity of renewable system (CO₂e/kWh)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Up to 100%, assuming all electricity demand is provided by a carbon-neutral power system
All other pollutants	Not Quantified ^{20, 21}

Discussion:

²⁰ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

²¹ Assumes that the onsite carbon-neutral system displaces electricity use only.

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Alternative Energy

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by the carbon-neutral system, then the GHG emission reduction is 10%

$$\text{GHG Emission Reduced} = \frac{1,000}{10,000} = 0.10 \text{ or } 10\%$$

If a project instead uses a renewable system with carbon intensity of 500 CO₂e/kWh and the local utility is 100 CO₂e/kWh, then the GHG emission reduction is 5%.

$$\text{GHG Emission Reduced} = \frac{1,000}{10,000} \times \frac{(1,000 - 500)}{1,000} = 0.05 \text{ or } 5\%$$

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AE-2

Alternative Energy

2.3.2 Establish Onsite Renewable Energy Systems-Solar Power

Range of Effectiveness: 0-100% of GHG emissions associated with electricity use.

Measure Description:

Using electricity generated from photovoltaic (PV) systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from PV systems²², the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total electricity demand (kWh)
- Amount of electricity to be provided by the PV system (kWh) or percent of total electricity demand to be provided by the PV system (%)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO₂e

Electricity_{baseline} = Total electricity demand (kWh)
Provided by Applicant

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

If the total amount of electricity to be provided by the PV system is known, then the GHG emission reduction is equivalent to the ratio of electricity from the PV system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{PV}}}{\text{Electricity}_{\text{baseline}}}$$

²² This mitigation measure does not account for GHG emissions associated with the embodied energy of PV systems.

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AE-2

Alternative Energy

Where:

- GHG emission reduction = Percentage reduction in GHG emissions for electricity use
- Electricity_{PV} = Electricity to be provided by PV system (kWh)
- Electricity_{baseline} = Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the PV system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

The amount of electricity generated by a PV system depends on the size and type of the PV system and the location of the project. The Project Applicant can use a publically-available solar calculator, such as California's Public Utilities and Energy Commissions Go Solar Clean Power Estimator²³, to estimate the size of the PV system needed to generate the desired amount of electricity. The only input required for this calculator is the location (zip code). Estimates of the amount of electricity that can be generated from 1.5, 3, 5, and 10 kW PV systems in cities around California are shown in Table AE-2.1 below.

Since there is a range of PV system efficiencies, the local agency may consider checking the type of PV efficiency assumed to ensure the system that is installed meets this capacity.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Up to 100%, assuming all electricity demand is provided by a PV system. Percent reduction would scale down linearly as the percent of electricity provided by a PV system decreases.
All other pollutants	Not Quantified ²⁴

Discussion:

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by a PV system, then the GHG emission reduction is 10%

²³ Available online at <http://gosolarcalifornia.cleanpowerestimator.com/gosolarcalifornia.htm>.

²⁴ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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Alternative Energy

$$\text{GHG Emission Reduced} = \frac{1,000}{10,000} = 0.10 \text{ or } 10\%$$

Assumptions:

The data in Table AE-2.1 was generated from California's Public Utilities and Energy Commissions Go Solar Clean Power Estimator, a publically-available solar calculator which the Project Applicant can use to estimate the PV system size needed to generate the desired amount of electricity. It is available online at:

<http://gosolarcalifornia.cleanpowerestimator.com/gosolarcalifornia.htm>.

Other publically-available solar calculators include:

- USDOE. NREL: PVWatts Calculator. Available online at: <http://www.nrel.gov/rredc/pvwatts/>.
- SolarEstimate.Org. Solar & Wind Estimator. Available online at: <http://www.solar-estimate.org/index.php?page=solar-calculator>.
- SharpUSA. Solar Calculator. Available online at: <http://sharpusa.cleanpowerestimator.com/sharpusa.htm>.

Preferred Literature:

None

Other Literature Reviewed:

None

Energy

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Alternative Energy

Table AE-2.1
Estimated Electricity Generation from Typical PV Systems

Location			Annual kWh Generated		
Air District	Major City	Zip Code	3 kW PV System	5 kW PV System	10 kW PV System
Amador County	Ione	95640	4,857	8,094	16,189
Antelope Valley	Lancaster	93534	5,034	8,390	16,781
Bay Area	San Francisco	94101	4,926	8,218	16,436
Butte County	Chico	95926	4,857	8,094	16,189
Calaveras County	Rancho Calaveras	95252	4,857	8,094	16,189
Colusa County	Colusa	95932	4,857	8,094	16,189
El Dorado County	South Lake Tahoe	96150	5,275	8,792	17,584
Feather River	Yuba City	95991	4,857	8,094	16,189
Glenn County	Orland	95963	4,857	8,094	16,189
Great Basin Unified	Bishop	93514	5,507	9,179	18,358
Imperial County	El Centro	92243	5,117	8,528	17,056
Kern County	Bakersfield	93301	5,082	8,470	16,939
Lake County	Lakeport	95453	4,857	8,094	16,189
Lassen County	Susanville	96130	5,275	8,792	17,584
Mariposa County	Mariposa	95338	5,065	8,441	16,882
Mendocino County	Ukiah	95482	4,926	8,218	16,436
Modoc County	Alturas	96101	5,275	8,792	17,584
Mojave Desert	Victorville	92392	5,885	9,808	19,617
Monterey Bay Unified	Monterey	93940	4,926	8,218	16,436
North Coast Unified	Eureka	95501	4,081	6,801	13,602
Northern Sierra	Grass Valley	95949	4,857	8,094	16,189
Northern Sonoma County	Healdsburg	95448	4,931	8,218	16,436
Placer County	Roseville	95678	4,857	8,094	16,189
Sacramento Metro	Sacramento	95864	4,857	8,094	16,189
San Diego County	San Diego	92182	5,102	8,528	17,056
San Joaquin Valley Unified	Fresno	93650	5,065	8,441	16,882
San Luis Obispo County	San Luis Obispo	93405	5,320	8,932	17,865
Santa Barbara County	Santa Barbara	93101	5,320	8,932	17,865
Shasta County	Redding	96001	4,081	6,801	13,602
Siskiyou County	Yreka	96097	4,363	7,271	14,543
South Coast	Los Angeles	90071	5,034	8,390	16,781
Tehama County	Red Bluff	96080	4,857	8,094	16,189
Tuolumne County	Sonora	95370	4,857	8,094	16,189
Ventura County	Oxnard	93030	5,034	8,390	16,781
Yolo-Solano	Davis	95616	4,857	8,094	16,189

Energy

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Alternative Energy

2.3.3 Establish Onsite Renewable Energy Systems-Wind Power

Range of Effectiveness: 0-100% of GHG emissions associated with electricity use.

Measure Description:

Using electricity generated from wind power systems displaces electricity demand which would ordinarily be supplied by the local utility. Since zero GHG emissions are associated with electricity generation from wind turbines²⁵, the GHG emissions reductions from this mitigation measure are equivalent to the emissions that would have been produced had electricity been supplied by the local utility.

Measure Applicability:

- Electricity use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total electricity demand (kWh)
- Amount of electricity to be provided by the wind power system (kWh) or percent of total electricity demand to be provided by the wind power system (%)

Baseline Method:

$$\text{GHG emissions} = \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

$$\text{GHG emissions} = \text{MT CO}_2\text{e}$$

$$\text{Electricity}_{\text{baseline}} = \text{Total electricity demand (kWh)} \\ \text{Provided by Applicant}$$

$$\text{Utility} = \text{Carbon intensity of Local Utility (CO}_2\text{e/kWh)}$$

Mitigation Method:

The GHG emission reduction is equivalent to the ratio of electricity from the wind power system to the total electricity demand:

$$\text{GHG emission reduction} = \frac{\text{Electricity}_{\text{wind}}}{\text{Electricity}_{\text{baseline}}}$$

²⁵ This mitigation measure does not account for GHG emissions associated with the embodied energy of wind turbines.

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Where:

GHG emission reduction = Percentage reduction in GHG emissions for electricity use

Electricity_{wind} = Electricity to be provided by wind power system (kWh)

Electricity_{baseline} = Total electricity demand (kWh)

If the percent of total electricity demand to be provided by the wind power system is known, then the GHG emission reduction is equivalent to that percentage.

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Up to 100%, assuming all electricity demand is provided by a wind power system. Percent reduction would scale down linearly as the percent of electricity provided by a wind power system decreases.
All other pollutants	None ²⁶

Discussion:

If a project's total electricity demand is 10,000 kWh, and 1,000 kWh of that is provided by a wind system, then the GHG emission reduction is 10%

$$\text{GHG Emission Reduced} = \frac{1,000}{10,000} = 0.10 \text{ or } 10\%$$

Assumptions:

None

Preferred Literature:

None

²⁶ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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Alternative Energy

Other Literature Reviewed:

None

Energy

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AE-4

Alternative Energy

2.3.4 Utilize a Combined Heat and Power System

Range of Effectiveness: 0-46% of GHG emissions associated with electricity use.

Measure Description:

For the same level of power output, combined heat and power (CHP) systems utilize less input energy than traditional separate heat and power (SHP) generation, resulting in fewer CO₂ emissions. In traditional SHP systems, heat created as a by-product is wasted by being released into the environment. In contrast, CHP systems harvest the thermal energy and use it to heat onsite or nearby processes, thus reducing the amount of natural gas or other fuel that would otherwise need to be combusted to heat those processes. In addition CHP systems lower the demand for grid electricity, thereby displacing the CO₂ emissions associated with the production of grid electricity.

This mitigation measure describes how to estimate CO₂ emissions savings (in MT per year) from utilizing a CHP system to supply energy demands which would otherwise be provided by separate heat and power systems (e.g. grid electricity for electricity demand and boilers for thermal demand). CO₂ emissions savings are quantified using the USEPA CHP Emission Calculator which allows users to estimate the CO₂ emissions savings associated with displaced electricity and thermal production from five CHP technologies: microturbine, fuel cell, reciprocating engine, combustion turbine, and backpressure steam turbine. The first three technologies have electricity generation capacities on a scale appropriate for residential neighborhoods, planned communities, and mixed-use and commercial developments. Combustion turbines and backpressure steam turbines are more appropriate for industrial processes or very large commercial developments. The user has the option to input project-specific data such as specific fuels, duct burner operation, cooling demand, and boiler efficiencies.

Table AE-4.1 provides examples of expected CO₂ savings for microturbines, fuel cells, and reciprocating engines of a range of electricity generating capacities for the five major California utilities (Southern California Edison (SCE), Los Angeles Department of Water and Power (LADWP), San Diego Gas and Electric (SDGE), Pacific Gas and Electric (PGE), and the Sacramento Municipal Utility District (SMUD). Default values provided by the USEPA CHP Calculator were used wherever possible (see the Assumptions section below). The magnitude of CO₂ reductions depends on the baseline power sources. For thermal demand, the baseline is assumed to be a new boiler with 80% efficiency. For electricity demand, the baseline is the carbon intensity of the local utility, which varies by utility. For reference, Table AE-4.2 provides the 2006 carbon intensity of delivered electricity for the five utilities. As shown in Table AE-4.1, certain CHP systems may not be appropriate for certain locations, especially in Northern California where PGE and SMUD have relatively low carbon intensities.

Measure Applicability:

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Alternative Energy

- Grid electricity use
- Natural gas combustion

Inputs:

The following information needs to be provided by the Project Applicant:

- Expected CHP technology (microturbine, fuel cell, or reciprocating engine)
- Expected electricity demand

Baseline Method:

$$\text{GHG emissions} = \text{CO}_2 \text{ emissions displaced}$$

Where:

$$\begin{aligned} \text{GHG emissions} &= \text{MT CO}_2\text{e} \\ \text{CO}_2 \text{ emissions displaced} &= \text{MT CO}_2 \text{ from separate heat and power system} \\ &\text{ Provided in Table AE-4.1 or calculated using} \\ &\text{ USEPA CHP Calculator} \end{aligned}$$

Here it is assumed that all GHG emissions produced from fuel combustion and electricity generation are CO₂ emissions.

Mitigation Method:

$$\begin{aligned} \text{GHG emission reduction} &= \text{Percent Reduction in CO}_2 \text{ emissions} \\ &\text{ Provided in Table A E-4.1 or calculated using USEPA CHP Calculator} \end{aligned}$$

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Up to 100%, assuming all electricity demand is provided by a CHP system. Percent reduction would scale down linearly as the percent of electricity provided by a CHP system decreases.
All other pollutants	0-70% ²⁷ Depends on CHP technology, electricity generating capacity, sulfur content of fuel, and displaced thermal generation technology. Reductions in CO ₂ may produce increases in SO ₂ and/or NO _x , or vice versa.

²⁷ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Energy

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AE-4

Alternative Energy

Discussion:

Assume a project is located in SCE's service area and has an expected electricity demand of 100 kW. Using Table AE-4:

- A 100 kW microturbine will generate more CO₂ emissions than a separate heat and power system of equivalent power capacity.
- A 100 kW fuel cell will generate about the same CO₂ emissions than a separate heat and power system of equivalent power capacity.
- A 100 kW reciprocating engine will generate 14% less CO₂ emissions as a separate heat and power system of equivalent power capacity.

Therefore, the Project Applicant should choose the reciprocating engine. This system would generate 568 MT CO₂ compared to 657 MT CO₂ from the separate heat and power system.

Assumptions:

Table AE-4.1 was prepared using the 2009 USEPA CHP Calculator, a publically-available tool found online at: <http://www.epa.gov/chp/basic/calculator.html>. The following defaults and assumptions were made to generate the data in Table AE-4.1:

- The range of electricity generating capacity shown in Table AE-4.1 is based on the normal range for the technology (as per Calculator default)
- Operates 8,760 hours per year
- Provides heat only (no cooling)
- Combusts natural gas fuel (116.7 CO₂/MMBtu emission rate and 1,020 Btu/scf HHV as per Calculator defaults)
- No supplementary duct burner
- Assumes 8% transmission loss for displaced electricity

Table AE-4.2 was prepared using data from the California Climate Action Registry (CCAR) Power/Utility Protocol (PUP) public reports for reporting year 2006. These PUP reports are available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>.

Preferred Literature:

The USEPA CHP Emissions Calculator compares the anticipated emissions from a CHP system to the emissions from SHP systems. The Calculator was developed by the U.S. Department of Energy's Distributed Energy Program, Oak Ridge National Laboratory, and the U.S. Environmental Protection Agency's CHP Partnership. Users can choose from five different CHP technologies (microturbine, fuel cell, reciprocating engine, combustion turbine, and backpressure steam turbine) and compare their performance to a number of different SHP systems (e.g. local electricity utility and

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Alternative Energy

existing or new gas boiler, fuel oil boiler, or heat bump). Additionally, users have the option to refine the analysis with project-specific inputs such as the cooling demand and additional duct burning. Details such as the cooling efficiency of the displaced cooling system must be known to perform more detailed analysis. The calculator can be used to estimate expected reductions in CO₂, SO₂, and NO_x emissions as well as fuel usage.

Alternative Literature:

The USEPA Combined Heat and Power Partnership Catalog of CHP Technologies presents performance details of six CHP technologies: gas turbine, microturbine, spark and compression ignition reciprocating engines, steam turbine, and fuel cell. Table I of the Introduction presents the equations necessary to calculate the percent fuel savings from using a CHP system instead of traditional separate heat and power generation. Subsequent chapters describe performance details of each of the CHP technologies, including estimated CO₂ emissions. The GHG emissions reductions associated with this mitigation measure are the change in emissions from using a CHP system rather than a SHP system in a building. The USEPA CHP Calculator methodologies are based in part on this Catalog of CHP Technologies document.

Other Literature Reviewed:

None

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Table AE-4.1
Estimated CO₂ Emissions Savings from CHP Systems in California^{1,2}

Utility	CHP Technology	Electricity Generating Capacity	Electric Efficiency	Power to Heat Ratio	CO ₂ Emissions from CHP	CO ₂ Emissions Displaced	Percent Reduction in CO ₂ Emissions ³
		(kW)	(% HHV)	--	(MT/year)	(MT/year)	(%)
SCE	Microturbine	30	24%	0.51	200	200	0%
		50	24%	0.51	334	333	0%
		100	26%	0.7	607	559	-9%
		250	26%	0.92	1517	1229	-23%
	Fuel Cell	5	30%	0.79	26	26	0%
		100	30%	0.79	527	527	0%
		1000	43%	1.95	3679	3783	3%
		2000	46%	1.92	6884	7597	9%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	325	11%
		100	28%	0.52	568	657	14%
		1000	29%	0.64	5514	5859	6%
		1200	28%	0.63	6759	7052	4%
LADWP	Microturbine	30	24%	0.51	200	277	28%
		50	24%	0.51	334	462	28%
		100	26%	0.7	607	817	26%
		250	26%	0.92	1517	1875	19%
	Fuel Cell	5	30%	0.79	26	39	33%
		100	30%	0.79	527	786	33%
		1000	43%	1.95	3679	6366	42%
		2000	46%	1.92	6884	12762	46%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	466	38%
		100	28%	0.52	568	915	38%
		1000	29%	0.64	5514	8441	35%
		1200	28%	0.63	6759	10188	34%
SDGE	Microturbine	30	24%	0.51	200	218	8%
		50	24%	0.51	334	363	8%
		100	26%	0.7	607	620	2%
		250	26%	0.92	1517	1381	-10%
	Fuel Cell	5	30%	0.79	26	30	12%
		100	30%	0.79	527	588	10%
		1000	43%	1.95	3679	4387	16%
		2000	46%	1.92	6884	8806	22%

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Alternative Energy

Utility	CHP Technology	Electricity Generating Capacity	Electric Efficiency	Power to Heat Ratio	CO ₂ Emissions from CHP	CO ₂ Emissions Displaced	Percent Reduction in CO ₂ Emissions ³
		(kW)	(% HHV)	--	(MT/year)	(MT/year)	(%)
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	358	19%
		100	28%	0.52	568	717	21%
		1000	29%	0.64	5514	6463	15%
		1200	28%	0.63	6759	7814	14%
PGE	Microturbine	30	24%	0.51	200	175	-15%
		50	24%	0.51	334	293	-14%
		100	26%	0.7	607	479	-27%
		250	26%	0.92	1517	1030	-47%
	Fuel Cell	5	30%	0.79	26	23	-16%
		100	30%	0.79	527	447	-18%
		1000	43%	1.95	3679	2984	-23%
		2000	46%	1.92	6884	5999	-15%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	280	-4%
		100	28%	0.52	568	577	2%
		1000	29%	0.64	5514	5059	-9%
		1200	28%	0.63	6759	6130	-10%
SMUD	Microturbine	30	24%	0.51	200	188	-7%
		50	24%	0.51	334	314	-6%
		100	26%	0.7	607	522	-16%
		250	26%	0.92	1517	1137	-33%
	Fuel Cell	5	30%	0.79	26	24	-7%
		100	30%	0.79	527	490	-8%
		1000	43%	1.95	3679	3411	-8%
		2000	46%	1.92	6884	6855	0%
	Reciprocating Engine (Rich Burn)	55	30%	0.63	290	304	4%
		100	28%	0.52	568	620	8%
		1000	29%	0.64	5514	5487	0%
		1200	28%	0.63	6759	6643	-2%

Abbreviations:

CHP - combined heat and power

CO₂ - carbon dioxide

HHV - higher heating value

kW - kilowatt

LADWP - Los Angeles Department of Water and Power

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Alternative Energy

PGE - Pacific Gas and Electric
 SCE - Southern California Edison
 SDGE - San Diego Gas and Electric
 SMUD - Sacramento Municipal Utility District
 USEPA - United State Environmental Protection Agency

Notes:

1. All data in this table generated using the USEPA CHP Calculator using utility-specific CO₂ intensity factors (see Table B). The following defaults and assumptions for the CHP system were used:
 - electricity generating capacity based on normal range for the technology (as per Calculator default)
 - operate 8,760 hours per year
 - heating only (no cooling)
 - natural gas fuel (116.7 CO₂/MMBtu emission rate and 1,020 Btu/scf HHV as per Calculator defaults)
 - no duct burner
 - assumed 8% transmission loss for displaced electricity
2. All CHP systems were compared to a baseline separate heat and power system consisting of a "new gas boiler" (assumed 80% efficiency as per Calculator default) and the local utility CO₂ intensity factor as provided in Table B.
3. A negative value indicates that the proposed CHP system is expected to generate more CO₂ emissions than the baseline separate heat and power system.

Source:

USEPA. 2009. CHP Emissions Calculator. Available online at:
<http://www.epa.gov/chp/basic/calculator.html>. Accessed April 2010.

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AE-4

Alternative Energy

**Table AE-4.2
Carbon Intensity of California Utilities**

Utility	Total From All Generation Sources ¹		
	Electricity	CO ₂ Emissions	CO ₂ intensity factor
	(MWh)	(MT)	(lb/MWh)
SCE	82,776,309	24,077,133	641
LADWP	29,029,883	16,308,526	1,239
SDGE	19,108,166	6,767,326	781
PGE	79,211,982	16,377,172	456
SMUD	15,133,569	3,811,571	555
eGRID National Average (default in USEPA CHP Calculator) ^{2,3}			540
eGRID National Fossil Fuel Average (default in USEPA CHP Calculator) ^{2,4}			1,076

Abbreviations:

CHP - combined heat and power
 CO₂ - carbon dioxide
 eGRID - Emissions and Generation Resource Integrated Database
 LADWP - Los Angeles Department of Water and Power
 lb - pound
 MWh - megawatt-hour
 PGE - Pacific Gas and Electric
 SCE - Southern California Edison
 SDGE - San Diego Gas and Electric
 SMUD - Sacramento Municipal Utility District
 USEPA - United State Environmental Protection Agency

Notes:

1. Total electricity and CO₂ emissions reported by the utility in the California Climate Action Registry Power/Utility Protocol (PUP) Reports for reporting year 2006. PUP Reports available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>.
2. eGRID is a comprehensive inventory of environmental attributes of electricity generation (such as the carbon intensity of power generation), compiled from data from three federal agencies: EPA, the Energy Information Administration (EIA), and the Federal Energy Regulatory Commission (FERC). The USEPA CHP Calculator provides default 2005 eGRID carbon intensities for the U.S. and California. For more information, see: <http://www.epa.gov/rdee/energy-resources/egrid/index.html>.
3. eGRID National Average represents the national average carbon intensity for electricity generation from all power sources (hydropower, nuclear, renewables, and fossil fuels including oil, natural gas, and coal).
4. eGRID National Fossil Fuel Average represents the national average carbon intensity for electricity generation from fossil fuel sources only (oil, natural gas, and coal).

Energy

MP# WRD-1 **AE-5** **Alternative Energy**

2.3.5 Establish Methane Recovery in Landfills

Range of Effectiveness: 73-77% reduction in GHG emissions from landfills without methane recovery

Measure Description:

One of the U.S.’s largest sources of methane emissions is from the decomposition of waste in landfills. Methane (CH₄) is a potent GHG and has a global warming potential (GWP) over 20 times that of CO₂. Capturing methane in landfills and combusting it to generate electricity for on-site energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.

Measure Applicability:

- Electricity from utility
- Note: this mitigation measure does not include energy generation from burning municipal solid waste.

Inputs:

The following information needs to be provided by the Project Applicant:

- Amount of mixed solid waste (short tons)

Baseline Method:

In landfills without landfill gas recovery systems, greenhouse gases are emitted directly to the atmosphere.

$$CO_2e_{baseline} = MSW \times LFM \times (44/12)$$

Where

- CO₂e_{baseline} = Amount of CO₂e generated from landfilling mixed solid waste (MT)
- MSW = Amount of mixed solid waste (short tons)
Provided by Applicant
- LFM = Landfill methane generated from mixed solid waste
0.580 MTCE / short ton MSW
- (44/12) = Conversion from MTCE to MT CO₂e

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Alternative Energy

Mitigation Method:

Mitigation Option 1 – Methane is captured and flared

USEPA assumes that 10% of the landfill CH₄ generated is either converted by bacteria or chemically oxidized to CO₂. The remaining 90% remains as CH₄ and is either captured and flared²⁸ or released directly to the atmosphere as fugitive CH₄ emissions. Assume a 99% combustion conversion efficiency.

$$CO_{2eMit1} = MSW \times LFM \times 1/(12/44 \times 21) \times [(CO_{2oxidation} + CO_{2flare}) \times 1 + (CH_{4fugitive} + CH_{4unflare}) \times 21]$$

Where

- CO_{2eMit1} = Amount of CO_{2e} from flaring landfill methane (MT)
- MSW = Amount of mixed solid waste (short tons)
Provided by Applicant
- LFM = MTCE²⁹ methane generated per short ton MSW
0.580 MTCE / short ton MSW
- 1/(12/44 x 21) = Conversion from MTCE to MT CH₄
- CO_{2oxidation} = Contribution from CO₂ generated from chemical or biological oxidation.
0.10
- CO_{2flare} = Contribution from CO₂ generated from the flaring of methane.
(1-0.10) x 0.75 x 0.99 = 0.66825
- 1 = Global warming potential of CO₂, used to convert from CO₂ to CO_{2e}
- CH_{4fugitive} = Contribution from CH₄ which remains unoxidized to CO₂ and is not captured for flaring, and therefore is released directly to the atmosphere.
(1-0.10) x (1-0.75) = 0.225

²⁸ Seek local agency guidance on whether to include CO_{2flare} emissions. USEPA and IPCC consider these emissions to be biogenic; therefore, the emissions are not included in USEPA and IPCC greenhouse gas emissions inventories.

²⁹ MTCE = metric MTMTMTMT carbon equivalent. The MTCE equivalent of 1 MT of a greenhouse gas is (12/44) multiplied by the greenhouse gas global warming potential.

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Alternative Energy

$CH_{4unflare}$ = Contribution from CH_4 which remains unoxidized and is captured for flaring, but remains unconverted due to incomplete combustion.

$$(1-0.10) \times 0.75 \times (1-0.99) = 0.00675$$

21 = Global warming potential of CH_4 , used to convert from CH_4 to CO_2e

Therefore:

$$CO_{2eMit1} = MSW \times 0.580 \times 1/(12/44 \times 21) \times [(0.76825 \times 1) + (0.23175 \times 21)]$$

$$CO_{2eMit1} = MSW \times 0.571$$

And then the percent reduction in GHG emissions from Mitigation Option 1 is:

$$GHG \text{ reduction}_{Mit1} = \frac{CO_{2e_{baseline}} - CO_{2e_{Mit1}}}{CO_{2e_{baseline}}}$$

$$GHG \text{ reduction}_{Mit1} = 73\%$$

As shown from this equation, the percent reduction in greenhouse gas emissions does not depend on the amount of mixed solid waste in the landfill.

Mitigation Option 2 – Methane is captured and combusted for cogeneration

If a cogeneration system is used to generate electricity from the combusted methane, the following equation is used to calculate the amount of electricity generated:

$$\text{Electricity} = MSW \times LFM \times 1/(12/44 \times 21) \times \text{Combust} \times \text{Density} \times 10^6 \times \text{HHV} \times \text{ECF} \times \text{EFF} \times$$

Where

Electricity = Amount of electricity generated from combustion of methane (kWh)

LFM = MTCE methane generated per short ton MSW
0.580 MTCE / short ton MSW

$1/(12/44 \times 21)$ = Conversion from MTCE to MT CH_4

Combust = Fraction of CH_4 captured and combusted for cogeneration

Energy

MP# WRD-1 **AE-5** **Alternative Energy**

$(1-0.10) \times 0.75 = 0.675$; assumes 10% of methane is oxidized prior to capture and 75% capture efficiency

Density = Density of CH₄
0.05 ft³ CH₄ / gram CH₄

10⁶ = Conversion from grams to MT

HHV = Heating value of CH₄
1,012 BTU / ft³ CH₄

ECF = Energy conversion factor
0.00009 kWh/BTU

EFF = Efficiency Factor
0.85; USEPA assumes a 15% system efficiency loss to account for system down-time

Therefore:

$$\text{Electricity} = \text{MSW} \times 265$$

Since this amount of electricity is generated on-site and no longer needs to be supplied by the local electricity utility, the indirect CO_{2e} emissions associated with that utility electricity generation are also avoided:

$$\text{CO}_{2e\text{displaced}} = \text{Electricity} \times \text{Utility}$$

Where

Utility = Carbon intensity of Local Utility (MT CO_{2e}/kWh) from table below

Power Utility	Carbon-Intensity (lbs CO _{2e} /MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{CO}_{2e\text{Mit2}} = \text{CO}_{2e\text{Mit1}} - \text{CO}_{2e\text{displaced}}$$

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Alternative Energy

And then the percent reduction in GHG emissions from Mitigation 2 is:

$$\text{GHG reduction}_{\text{Mit2}} = \frac{\text{CO}_2\text{e}_{\text{baseline}} - (\text{CO}_2\text{e}_{\text{Mit1}} - \text{CO}_2\text{e}_{\text{displaced}})}{\text{CO}_2\text{e}_{\text{baseline}}}$$

$$\text{GHG reduction}_{\text{Mit2}} = \frac{1.556 + (265 \times \text{Utility})}{2.127}$$

As shown from these equations, the percent reduction in GHG emissions does not depend on the amount of mixed solid waste in the landfill.

Note that further reductions could be achieved if the heat generated from combustion and cogeneration were recovered and used to displace thermal energy that otherwise would have been generated from a separate heat system, such as a boiler. The magnitude of reductions depends on the system being displaced, including the boiler efficiency and the heating value of the fuel as compared to the heating value of methane. To take credit for this additional reduction, the Project Applicant would need to quantify displaced GHG emissions using the baseline document and the Mitigation Measure BE-5, Install Energy Efficient Boilers.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	73-77%
All other pollutants	Not Quantified ³⁰

Discussion:

In Southern California Edison's service area, a landfill which captures and flares methane achieves a 73% reduction in GHG emissions compared to a landfill without a methane recovery system. A landfill which captures and combusts methane for cogeneration achieves a 77% reduction in GHG emissions compared to a landfill without a methane recovery system:

$$\text{GHG reduction Mit2} = \frac{1.556 + (265 \times 2.909 \times 10^{-4})}{2.127} = 77\%$$

Assumptions:

³⁰ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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Alternative Energy

Data based upon the following reference:

- USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks, 3rd Ed. Available online at: <http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf>

Preferred Literature:

Section 6 of USEPA's Solid Waste Management and Greenhouse Gases report presents methodology for calculating greenhouse gas emissions associated with three different landfill management systems: landfills which do not capture landfill gas, landfills which recover methane and flare it, and landfills which recover methane and combust it for cogeneration. Column (b) of Exhibit 6-6 shows methane generation factors for various types of landfill waste in MTCE per short ton of waste. For this analysis, the value for mixed solid waste is used. Section 6.2 provides USEPA defaults for percent of methane chemically or biologically oxidized to CO₂ (10%) and the efficiency of methane capture systems (75%). Exhibit 6-7 provides USEPA defaults used for calculating the amount of electricity generated from methane combustion and cogeneration.

Alternative Literature:

None

Other Literature Reviewed:

- CAR. 2009. Landfill Project Protocol: Collecting and Destroying Methane from Landfills. Version 3.0. Available online at: <http://www.climateactionreserve.org/how/protocols/adopted/landfill/current-landfill-project-protocol/>
- CalRecycle (CIWMB). Climate Change and Solid Waste Management: Draft Final Report and Draft GHG Calculator Tool. Available online at: <http://www.calrecycle.ca.gov/Climate/Organics/LifeCycle/default.htm>. Accessed February 2010.
- CARB. 2008. Local Government Operations Protocol. Version 1.0. Available online at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/final_lgo_protocol_2008-09-25.pdf
- American Carbon Registry. Standards. Available online at: <http://www.americancarbonregistry.org/carbon-accounting/standards/?searchterm=landfill>. Accessed February 2010.

Energy

MP# WRD-1

AE-6

Alternative Energy

2.3.6 Establish Methane Recovery in Wastewater Treatment Plants

Range of Effectiveness: 95-97% reduction in GHG emissions from wastewater treatment plants without recovery.

Measure Description:

Methane (CH₄) is a potent GHG and has a global warming potential (GWP) over 20 times that of CO₂. Capturing methane from wastewater treatment (WWT) plants and combusting it to generate electricity for on-site energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.

Measure Applicability:

- Electricity from utility

Inputs:

The following information needs to be provided by the Project Applicant:

- Liters of wastewater

Baseline Method:

Centralized wastewater treatment facilities may use anaerobic or facultative lagoons or anaerobic digesters to treat wastewater. The methane emissions expected from anaerobic or facultative lagoons is calculated using the following equation from the California Air Resources Board (CARB)'s Local Government Reporting Protocol:

$$\text{CO}_2\text{e}_{\text{baseline}} = \text{Wastewater} \times \text{BOD}_5 \text{ load} \times 10^{-6} \times \text{Bo} \times \text{MCF}_{\text{anaerobic}} \times 10^{-3} \times 21$$

Where

CO ₂ e _{baseline}	=	Amount of CO ₂ e generated from wastewater treatment (MT)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
BOD ₅ load	=	Concentration of BOD ₅ in wastewater 200 mg / liter wastewater
10 ⁻⁶	=	Conversion from mg to kg
Bo	=	Maximum CH ₄ -producing capacity for domestic wastewater 0.6 kg CH ₄ / kg BOD ₅ removed
MCF _{anaerobic}	=	CH ₄ correction factor for anaerobic systems 0.8
10 ⁻³	=	Conversion from kg to MT

Energy

MP# WRD-1

AE-6

Alternative Energy

21 = Global warming potential of CH₄, used to convert from CH₄ to CO₂e

Therefore:

$$\text{CO}_2\text{e}_{\text{baseline}} = \text{Wastewater} \times 2.02 \times 10^{-6}$$

Mitigation Method:

Mitigation Option 1 – Methane is captured and flared

Anaerobic digesters produce methane-rich biogas which can be combusted and converted to CO₂.³¹ Inherent inefficiencies in the system results in incomplete combustion of the biogas, which results in remaining methane emissions:

$$\text{CO}_2\text{e}_{\text{Mit1}} = \text{Wastewater} \times 0.2642 \times \text{Digester Gas} \times F_{\text{CH}_4} \times (\text{CH}_4\text{unflare} + \text{CO}_2\text{flare})$$

Where

CO ₂ e _{Mit1}	=	Amount of CO ₂ e generated from flaring methane from wastewater treatment plant (MT)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
0.2642	=	Conversion from liters to gallons
Digester Gas	=	Volume of biogas generated per volume of wastewater treated ft ³ biogas / gallon wastewater 0.01
F _{CH₄}	=	Fraction of CH ₄ in biogas 0.65
CH ₄ unflare	=	Contribution from CH ₄ which is captured for flaring, but remains unconverted due to incomplete combustion CH ₄ unflare = ρ _{CH₄} × (1-DE) × 0.0283 × 10 ⁻⁶ × 21 = 3.93 × 10 ⁻⁶
ρ _{CH₄}	=	Density of CH ₄ at standard conditions 662 g/m ³
DE	=	CH ₄ destruction efficiency 0.99
0.0283	=	Conversion factor from ft ³ to m ³
10 ⁻⁶	=	Conversion factor from g to MT
21	=	Global warming potential of CH ₄ , used to convert from CH ₄ to CO ₂ e
CO ₂ flare	=	Contribution from CO ₂ generated from the flaring of methane
CO ₂ flare	=	EF / 2204.623 × 1 = 5.44 × 10 ⁻⁵
EF	=	Emission factor for methane combustion

³¹ Seek local agency guidance on whether to include CO₂ combustion emissions. USEPA and IPCC consider these emissions to be biogenic; therefore, the emissions are not included in USEPA and IPCC greenhouse gas emissions inventories.

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MP# WRD-1

AE-6

Alternative Energy

		0.120 lb CO ₂ /ft ³ CH ₄
2204.623	=	Conversion factor from lb to MT
1	=	Global warming potential of CO ₂ , used to convert from CO ₂ to CO ₂ e

Therefore:

$$\text{CO}_2\text{e}_{\text{Mit1}} = \text{Wastewater} \times 1.00 \times 10^{-7}$$

And then the percent reduction in GHG emissions from Mitigation Option 1 is:

$$\text{GHG reduction}_{\text{Mit1}} = \frac{\text{CO}_2\text{e}_{\text{baseline}} - \text{CO}_2\text{e}_{\text{Mit1}}}{\text{CO}_2\text{e}_{\text{baseline}}}$$

$$\text{GHG reduction}_{\text{Mit1}} = 95\%$$

As shown from this equation, the percent reduction in greenhouse gas emissions does not depend on the amount of wastewater being treated.

Mitigation Option 2 – Methane is captured and combusted for cogeneration

If a cogeneration system is used to generate electricity from the combusted biogas, the following equation is used to calculate the amount of electricity generated:

$$\text{Electricity} = \text{Wastewater} \times 0.2642 \times \text{Digester Gas} \times F_{\text{CH}_4} \times \text{HHV}_{\text{CH}_4} \times \text{ECF} \times \text{EFF}$$

Where:

Electricity	=	Amount of electricity generated from combustion of methane (kWh)
Wastewater	=	Volume of wastewater (liters) Provided by Applicant
0.2642	=	Conversion from liters to gallons
Digester Gas	=	Volume of biogas generated per volume of wastewater treated 0.01 ft ³ biogas / gallon wastewater
F _{CH₄}	=	Fraction of CH ₄ in biogas 0.65
HHV	=	Heating value of methane 1,012 BTU / ft ³ CH ₄
ECF	=	Energy conversion factor 0.00009 kWh/BTU
EFF	=	Efficiency Factor 0.85; USEPA assumes a 15% system efficiency loss to account for system down-time

Therefore:

Energy

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Alternative Energy

$$\text{Electricity} = \text{Wastewater} \times 1.33 \times 10^{-4}$$

Since this amount of electricity is generated on-site and no longer needs to be supplied by the local electricity utility, the indirect CO₂e emissions associated with that utility electricity generation are also avoided:

$$\text{CO}_2\text{e}_{\text{displaced}} = \text{Electricity} \times \text{Utility}$$

Where

Utility = Carbon intensity of Local Utility (MT CO₂e/kWh) from table below

Power Utility	Carbon-Intensity (lbs CO ₂ e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{CO}_2\text{e}_{\text{Mit2}} = \text{CO}_2\text{e}_{\text{Mit1}} - \text{CO}_2\text{e}_{\text{displaced}}$$

And then the percent reduction in GHG emissions from Mitigation 2 is:

$$\text{GHG reduction}_{\text{Mit2}} = \frac{\text{CO}_2\text{e}_{\text{baseline}} - (\text{CO}_2\text{e}_{\text{Mit1}} - \text{CO}_2\text{e}_{\text{displaced}})}{\text{CO}_2\text{e}_{\text{baseline}}}$$

$$\text{GHG reduction}_{\text{Mit2}} = \frac{1.92 \times 10^{-6} + (1.33 \times 10^{-4} \times \text{Utility})}{2.02 \times 10^{-6}}$$

As shown from these equations, the percent reduction in GHG emissions does not depend on the amount of wastewater being treated.

Note that further reductions could be achieved if the heat generated from combustion and cogeneration were recovered and used to displace thermal energy that otherwise would have been generated from a separate heat system, such as a boiler. The magnitude of reductions depends on the system being displaced, including the boiler efficiency and the heating value of the fuel as compared to the heating value of methane. To take credit for this additional reduction, the Project Applicant would need to quantify displaced GHG emissions using the baseline document and the Mitigation Measure BE-5, Install Energy Efficient Boilers.

Energy

MP# WRD-1

AE-6

Alternative Energy

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	95-97%
All other pollutants	Not Quantified ³²

Discussion:

In Southern California Edison's service area, a WWT plant which captures and flares methane achieves a 95% reduction in GHG emissions compared to a WWT plant without a methane recovery system. A WWT plant which captures and combusts methane for cogeneration achieves a 97% reduction in GHG emissions compared to a landfill without a methane recovery system:

$$\text{GHG reduction Mit2} = \frac{1.92 \times 10^{-6} + (1.33 \times 10^{-4} \times 2.909 \times 10^{-4})}{2.02 \times 10^{-6}} = 97\%$$

Assumptions:

Data based upon the following references:

- CARB. 2008. Local Government Operations Protocol. Chapter 10: Wastewater Treatment Facilities. Available online at: http://www.arb.ca.gov/cc/protocols/localgov/pubs/final_lgo_protocol_2008-09-25.pdf
- USEPA. 2008. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006. Chapter 8: Waste. Available online at: http://www.epa.gov/climatechange/emissions/downloads/08_CR.pdf
- USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks, 3rd Ed. Available online at: <http://www.epa.gov/climatechange/wycd/waste/downloads/fullreport.pdf>

Preferred Literature: Chapter 10 of CARB's Local Government Operations Protocol (LGOP) provides the methodology for calculating methane emissions from wastewater treatment. Centralized wastewater treatment facilities may use anaerobic or facultative lagoons or anaerobic digesters to treat wastewater. Equation 10.3 of the LGOP calculates methane emissions from anaerobic or facultative lagoons. Equation 10.1 of the LGOP calculates the methane emissions remaining due to incomplete combustion of anaerobic digester gas. Default values for the amount of digester gas produced per volume of wastewater and the fraction of methane in digester gas are taken from the 2008 USEPA Inventory of U.S. Greenhouse Gas Emissions and Sinks. Exhibit 6-7 of

³² Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Energy

MP# WRD-1

AE-6

Alternative Energy

USEPA's Solid Waste Management and Greenhouse Gases report provides the methodology for calculating the amount of electricity generated from methane combustion and cogeneration.

Alternative Literature:

None

Other Literature Reviewed:

None

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Transportation

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MP# LU-1.5 & LU-2.1.8

LUT-1

Land Use / Location

3.0 Transportation

3.1 Land Use/Location

3.1.1 Increase Density

Range of Effectiveness: 0.8 – 30.0% vehicle miles traveled (VMT) reduction and therefore a 0.8 – 30.0% reduction in GHG emissions.

Measure Description:

Designing the Project with increased densities, where allowed by the General Plan and/or Zoning Ordinance reduces GHG emissions associated with traffic in several ways. Density is usually measured in terms of persons, jobs, or dwellings per unit area. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. This strategy also provides a foundation for implementation of many other strategies which would benefit from increased densities. For example, transit ridership increases with density, which justifies enhanced transit service.

The reductions in GHG emissions are quantified based on reductions to VMT. The relationship between density and VMT is described by its elasticity. According to a recent study published by Brownstone, et al. in 2009, the elasticity between density and VMT is 0.12. Default densities are based on the typical suburban densities in North America which reflects the characteristics of the ITE Trip Generation Manual data used in the baseline estimates.

Measure Applicability:

- Urban and suburban context
 - Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Transportation

CEQA# MM D-1 & D-4
MP# LU-1.5 & LU-2.1.8

LUT-1

Land Use / Location

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of housing units per acre or jobs per job acre

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B \text{ [not to exceed 30\%]}$$

Where:

A = Percentage increase in housing units per acre or jobs per job acre³³ = (number of housing units per acre or jobs per job acre – number of housing units per acre or jobs per job acre for typical ITE development) / (number of housing units per acre or jobs per job acre for typical ITE development) For small and medium sites (less than ½ mile in radius) the calculation of housing and jobs per acre should be performed for the development site as a whole, so that the analysis does not erroneously attribute trip reduction benefits to measures that simply shift jobs and housing within the site with no overall increase in site density. For larger sites, the analysis should address the development as several ½-mile-radius sites, so that shifts from one area to another would increase the density of the receiving area but reduce the density of the donating area, resulting in trip generation rate decreases and increases, respectively, which cancel one another.

B = Elasticity of VMT with respect to density (from literature)

Detail:

- A: [not to exceed 500% increase]
 - If housing: (Number of housing units per acre – 7.6) / 7.6
(See Appendix C for detail)
 - If jobs: (Number of jobs per acre – 20) / 20
(See Appendix C for detail)
- B: 0.07 (Boarnet and Handy 2010)

Assumptions:

Data based upon the following references:

- Boarnet, Marlon and Handy, Susan. 2010. “DRAFT Policy Brief on the Impacts of Residential Density Based on a Review of the Empirical Literature.” <http://arb.ca.gov/cc/sb375/policies/policies.htm>; Table 1.

³³ This value should be checked first to see if it exceeds 500% in which case A = 500%.

Transportation

CEQA# MM D-1 & D-4
MP# LU-1.5 & LU-2.1.8

LUT-1

Land Use / Location

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ³⁴
CO ₂ e	1.5-30% of running
PM	1.5-30% of running
CO	1.5-30% of running
NOx	1.5-30% of running
SO ₂	1.5-30% of running
ROG	0.9-18% of total

Discussion:

The VMT reductions for this strategy are based on changes in density versus the typical suburban residential and employment densities in North America (referred to as “ITE densities”). These densities are used as a baseline to mirror those densities reflected in the ITE Trip Generation Manual, which is the baseline method for determining VMT.

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of housing units or jobs per acre (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing residential density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as density). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for housing:

Low Range % VMT Reduction (8.5 housing units per acre)

$$= (8.5 - 7.6) / 7.6 * 0.07 = 0.8\%$$

High Range % VMT Reduction (60 housing units per acre)

$$= \frac{60 - 7.6}{7.6} = 6.9 \text{ or } 690\% \text{ Since greater than } 500\%, \text{ set to } 500\%$$

$$= 500\% \times 0.07 = 0.35 \text{ or } 35\% \text{ Since greater than } 30\%, \text{ set to } 30\%$$

³⁴ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

CEQA# MM D-1 & D-4
MP# LU-1.5 & LU-2.1.8

LUT-1

Land Use / Location

Sample calculations are provided below for jobs:

Low Range % VMT Reduction (25 jobs per acre)

$$= (25 - 20) / 20 * 0.12 = 3\%$$

High Range % VMT Reduction (100 jobs per acre)

$$= \frac{100 - 20}{20} = 4 \text{ or } 400\%$$

$$= 400\% \times 0.12 = 0.48 \text{ or } 48\% \text{ Since greater than } 30\%, \text{ set to } 30\%$$

Preferred Literature:

- -0.07 = elasticity of VMT with respect to density

Boarnet and Handy's detailed review of existing literature highlighted three individual studies that used the best available methods for analyzing data for individual households. These studies provided the following elasticities: -0.12 - Brownstone (2009), -0.07 - Bento (2005), and -0.08 - Fang (2008). To maintain a conservative estimate of the impacts of this strategy, the lower elasticity of -0.07 is used in the calculations.

Alternative Literature:

- -0.05 to -0.25 = elasticity of VMT with respect to density

The *TRB Special Report 298* literature suggests that doubling neighborhood density across a metropolitan area might lower household VMT by about 5 to 12 percent, and perhaps by as much as 25 percent, if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures.

Alternative Literature References:

TRB, 2009. *Driving and the Built Environment*, Transportation Research Board Special Report 298. <http://onlinepubs.trb.org/Onlinepubs/sr/sr298.pdf> . Accessed March 2010. (p. 4)

Other Literature Reviewed:

None

Transportation

MP# LU-3.3

LUT-2

Land Use / Location

3.1.2 Increase Location Efficiency

Range of Effectiveness: 10-65% vehicle miles traveled (VMT) reduction and therefore 10-65% reduction in GHG emissions

Measure Description:

This measure is not intended as a separate strategy but rather a documentation of empirical data to justify the “cap” for all land use/location strategies. The location of the Project relative to the type of urban landscape such as being located in an urban area, infill, or suburban center influences the amount of VMT compared to the statewide average. This is referred to as the location of efficiency since there are synergistic benefits to these urban landscapes.

To receive the maximum reduction for this location efficiency, the project will be located in an urban area/ downtown central business district. Projects located on brownfield sites/infill areas receive a lower, but still significant VMT reduction. Finally, projects in suburban centers also receive a reduction for their efficient location. Reductions are based on the typical VMT of a specific geographic area relative to the average VMT statewide.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

VMT = vehicle miles traveled
 EF_{running} = emission factor for running emissions

Inputs:

- No inputs are needed. VMT reduction ranges are based on the geographic location of the project within the region.

Mitigation Method:

% VMT reduction =

Transportation

MP# LU-3.3

LUT-2

Land Use / Location

- Urban: 65% (representing VMT reductions for the average urban area in California versus the statewide average VMT)
- Compact Infill: 30% (representing VMT reductions for the average compact infill area in California versus the statewide average VMT)
- Suburban Center: 10% (representing VMT reductions for the average suburban center in California versus the statewide average VMT)

Assumptions:

Data based upon the following references:

- Holtzclaw, et al. 2002. "Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and Chicago." *Transportation Planning and Technology*, Vol. 25, pp. 1–27.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ³⁵
CO ₂ e	10-65% of running
PM	10-65% of running
CO	10-65% of running
NOx	10-65% of running
SO ₂	10-65% of running
ROG	6-39% of total

Discussion:

Example:

N/A – no calculations needed

Alternative Literature:

- 13-72% reduction in VMT for infill projects

Preferred Literature:

Holtzclaw, et al., [1] studied relationships between auto ownership and mileage per car and neighborhood urban design and socio-economic characteristics in the Chicago, Los

³⁵ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

MP# LU-3.3

LUT-2

Land Use / Location

Angeles, and San Francisco metro areas. In all three regions, average annual vehicle miles traveled is a function of density, income, household size, and public transit, as well as pedestrian and bicycle orientation (to a lesser extent). The annual VMT for each neighborhood was reviewed to determine empirical VMT reduction “caps” for this report. These location-based caps represent the average and maximum reductions that would likely be expected in urban, infill, suburban center, and suburban locations.

Growing Cooler looked at 10 studies which have considered the effects of regional location on travel and emissions generated by individual developments. The studies differ in methodology and context but they tend to yield the same conclusion: infill locations generate substantially lower VMT per capita than do greenfield locations, ranging from 13 - 72% lower VMT.

Literature References:

- [1] Holtzclaw, et al. 2002. “Location Efficiency: Neighborhood and Socioeconomic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles, and Chicago.” *Transportation Planning and Technology*, Vol. 25, pp. 1–27.
- [2] Ewing, et al, 2008. *Growing Cooler – The Evidence on Urban Development and Climate Change*. Urban Land Institute. (p.88, Figure 4-30)

Other Literature Reviewed:

None

Transportation

CEQA# MM D-9 & D-4
MP# LU-2

LUT-3

Land Use / Location

3.1.3 Increase Diversity of Urban and Suburban Developments (Mixed Use)

Range of Effectiveness: 9-30% vehicle miles traveled (VMT) reduction and therefore 9-30% reduction in GHG emissions.

Measure Description:

Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. For example when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs. A description of diverse uses for urban and suburban areas is provided below.

Urban:

The urban project will be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa). The residential units should be within ¼-mile of parks, schools, or other civic uses. The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Suburban:

The suburban project will have at least three of the following on site and/or offsite within ¼-mile: Residential Development, Retail Development, Park, Open Space, or Office. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context (unless the project is a master-planned community)
- Appropriate for mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

Transportation

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$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of each land use type in the project (to calculate land use index)

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Land Use} * B \text{ [not to exceed 30\%]}$$

Where

Land Use = Percentage increase in land use index versus single use development
 = (land use index – 0.15)/0.15 (see Appendix C for detail)

$$\text{Land use index} = -a / \ln(6)$$

(from [2])

$$a = \sum_{i=1}^6 a_i \times \ln(a_i)$$

a_i = building floor area of land use i / total square feet of area considered

- residential a₁ = single family
- a₂ = multifamily residential
- a₃ = commercial
- a₄ = industrial
- a₅ = institutional
- a₆ = park

if land use is not present and a_i is equal to 0, set a_i equal to 0.01

B = elasticity of VMT
 with respect to land use index (0.09 from [1])
 increase not to exceed 500%

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LUT-3

Land Use / Location

Assumptions:

Data based upon the following references:

- [1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.
- [2] Song, Y., and Knaap, G., "Measuring the effects of mixed land uses on housing values." *Regional Science and Urban Economics* 34 (2004) 663-680. (p. 669)
http://urban.csuohio.edu/~sugie/papers/RSUE/RSUE2005_Measuring%20the%20effects%20of%20mixed%20land%20use.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ³⁶
CO ₂ e	9-30% of running
PM	9-30% of running
CO	9-30% of running
NO _x	9-30% of running
SO ₂	9-30% of running
ROG	5.4-18% of total

Discussion:

In the above calculation, a land use index of 0.15 is used as a baseline representing a development with a single land use (see Appendix C for calculations).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of land use index (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing the land use index by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as diversity). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

³⁶ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

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Land Use / Location

Example:

Sample calculations are provided below:

90% single family homes, 10% commercial

- Land use index = $-\frac{0.9 \ln(0.9) + 0.1 \ln(0.1) + 4 \cdot 0.01 \ln(0.01)}{\ln(6)} = 0.3$
- Low Range % VMT Reduction = $(0.3 - 0.15) / 0.15 \cdot 0.09 = 9\%$

1/6 single family, 1/6 multi-family, 1/6 commercial, 1/6 industrial, 1/6 institutional, 1/6 parks

- Land use index = $-\frac{6 \cdot 0.17 \ln(0.17)}{\ln(6)} = 1$
- High Range % VMT Reduction (land use index = 1)
- Land use = $(1 - 0.15) / 0.15 = 5.6$ or 566%. Since this is greater than 500%, set to 500%.
- % VMT Reduction = $(5 \times 0.09) = 0.45$ or 45%. Since this is greater than 30%, set to 30%.

Preferred Literature:

- -0.09 = elasticity of VMT with respect to land use index

The land use (or entropy) index measurement looks at the mix of land uses of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses. Ewing's [1] synthesis looked at a total of 10 studies, where none controlled for self-selection³⁷. The weighted average elasticity of VMT with respect to the land use mix index is -0.09. The methodology for calculating the land use index is described in Song and Knaap [2].

Alternative Literature:

- Vehicle trip reduction = $[1 - (\text{ABS}(1.5 \cdot h - e) / (1.5 \cdot h + e)) - 0.25] / 0.25 \cdot 0.03$

Where :

h = study area housing units, and

e = study area employment.

Nelson\Nygaard's report [3] describes a calculation adapted from Criterion and Fehr & Peers [4]. The formula assumes an "ideal" housing balance of 1.5 jobs per household and a baseline diversity of 0.25. The maximum trip reduction with this method is 9%.

³⁷ Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.



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LUT-3

Land Use / Location

Alternative Literature References:

[3] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.12).
<http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf>

[4] Criterion Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Other Literature Reviewed:

None

Transportation

CEQA# MM D-3
MP# LU-2.1.4

LUT-4

Land Use / Location

3.1.4 Increase Destination Accessibility

Range of Effectiveness: 6.7 – 20% vehicle miles traveled (VMT) reduction and therefore 6.7-20% reduction in GHG emissions.

Measure Description:

The project will be located in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$\text{CO}_2 = \text{VMT} \times \text{EF}_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Distance to downtown or major job center

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Center Distance} * B \text{ [not to exceed 30\%]}$$

Where

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LUT-4

Land Use / Location

Center Distance = Percentage decrease in distance to downtown or major job center versus typical ITE suburban development = (distance to downtown/job center for typical ITE development – distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)

Center Distance = 12 - Distance to downtown/job center for project) / 12
See Appendix C for detail

B = Elasticity of VMT with respect to distance to downtown or major job center (0.20 from [1])

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." Journal of the American Planning Association, <to be published> (2010). Table 4.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ³⁸
CO ₂ e	6.7 – 20% of running
PM	6.7 – 20% of running
CO	6.7 – 20% of running
NOx	6.7 – 20% of running
SO ₂	6.7 – 20% of running
ROG	4 – 12% of total

Discussion:

The VMT reductions for this strategy are based on changes in distance to key destinations versus the standard suburban distance in North America. This distance is used as a baseline to mirror the distance to destinations reflected in the land uses for the ITE Trip Generation Manual, which is the baseline method for determining VMT.

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as destination accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density,

³⁸ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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LUT-4

Land Use / Location

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design, diversity, destination, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (8 miles to downtown/job center) = $\frac{12-8}{12} \times 0.20 = 6.7\%$
- High Range % VMT Reduction (0.1 miles to downtown/job center) = $\frac{12-0.1}{12} \times 0.20 = 20.0\%$

Preferred Literature:

- -0.20 = elasticity of VMT with respect to job accessibility by auto
- -0.20 = elasticity of VMT with respect to distance to downtown

The Ewing and Cervero report [1] finds that VMT is strongly related to measures of accessibility to destinations. The weighted average elasticity of VMT with respect to job accessibility by auto is -0.20 (looking at five total studies). The weighted average elasticity of VMT with respect to distance to downtown is -0.22 (looking at four total studies, of which one controls for self selection³⁹).

Alternative Literature:

- 10-30% reduction in vehicle trips

The VTPI literature [2] suggests a 10-30% reduction in vehicle trips for “smart growth” development practices that result in more compact, accessible, multi-modal communities where travel distances are shorter, people have more travel options, and it is possible to walk and bicycle more.

Alternative Literature References:

[2] Litman, T., 2009. “Win-Win Emission Reduction Strategies.” Victoria Transport Policy Institute (VTPI). Website: <http://www.vtpi.org/wwclimate.pdf>. Accessed March 2010. (p. 7, Table 3)

³⁹ Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.



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MP# LU-2.1.4

LUT-4

Land Use / Location

Other Literature Reviewed:

None

Transportation

CEQA# MM D-2
MP# LU-1,LU-4

LUT-5

Land Use / Location

3.1.5 Increase Transit Accessibility

Range of Effectiveness: 0.5 – 24.6% VMT reduction and therefore 0.5-24.6% reduction in GHG emissions.⁴⁰

Measure Description:

Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from stop to edge of development), and/or
 - A rail station located within a 20 minute walk (or roughly ½ mile from station to edge of development)
- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling

In addition to the features listed above, the following strategies may also be implemented to provide an added benefit beyond what is documented in the literature:

- Mixed use development [LUT-3]
- Traffic calmed streets with good connectivity [SDT-2]
- Parking management strategies such as unbundled parking, maximum parking requirements, market pricing implemented to reduce amount of land dedicated to vehicle parking [see PPT-1 through PPT-7]

Measure Applicability:

- Urban and suburban context
- Appropriate in a rural context if development site is adjacent to a commuter rail station with convenient rail service to a major employment center
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

⁴⁰ Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

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See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Distance to transit station in project

Mitigation Method:

$$\% \text{ VMT} = \text{Transit} * B \text{ [not to exceed 30\%]}$$

Where

Transit = Increase in transit mode share = % transit mode share for project - % transit mode share for typical ITE development (1.3% as described in Appendix C)

% transit mode share for project (see Table)

Distance to transit	Transit mode share calculation equation (where x = distance of project to transit)
0 – 0.5 miles	-50*x + 38
0.5 to 3 miles	-4.4*x + 15.2
> 3 miles	no impact
Source: Lund et al, 2004; Fehr & Peers 2010 (see Appendix C for calculation detail)	

B = adjustments from transit ridership increase to VMT (0.67, see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Lund, H. and R. Cervero, and R. Willson (2004). *Travel Characteristics of Transit-Oriented Development in California*. (p. 79, Table 5-25)

Transportation

CEQA# MM D-2
MP# LU-1,LU-4

LUT-5

Land Use / Location

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁴¹
CO ₂ e	0.5 – 24.6% of running
PM	0.5 – 24.6% of running
CO	0.5 – 24.6% of running
NOx	0.5 – 24.6% of running
SO ₂	0.5 – 24.6% of running
ROG	0.3 – 14.8% of total

Discussion:

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as transit accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, transit accessibility, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below for a rail station:

- Low Range % VMT Reduction (3 miles from station) = $[(-4.4 \times 3 + 15.2) - 1.3\%] \times 0.67 = 0.5\%$
- High Range % VMT Reduction (0 miles from station) = $[(-50 \times 0 + 38) - 1.3\%] \times 0.67 = 24.6\%$

Preferred Literature:

- 13 to 38% transit mode share (residents in TODs with ½ mile of rail station)
- 5 to 13% transit mode share (residents in TODs from ½ mile to 3 miles of rail station)

The *Travel Characteristics* report [1] surveyed TODs and surrounding areas in San Diego, Los Angeles, San Jose, Sacramento, and Bay Area regions. Survey sites are all located in non-central business district locations, are within walking distance of a transit station with rail service headways of 15 minutes or less, and were intentionally developed as TODs.

⁴¹ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

CEQA# MM D-2
MP# LU-1,LU-4

LUT-5

Land Use / Location

Alternative Literature:

Alternate:

- -0.05 = elasticity of VMT with respect to distance to nearest transit stop

Ewing and Cervero's meta-analysis [2] provides this weighted average elasticity based on six total studies, of which one controls for self-selection. The report does not provide the range of distances where this elasticity is valid.

Alternate:

- 5.9 – 13.3% reduction in VMT

The Bailey, et al. 2008 report [3] predicted a reduction of household daily VMT of 5.8 miles for a location next to a rail station and 2.6 miles for a location next to a bus station. Using the report's estimate of 43.75 daily average miles driven, the estimated reduction in VMT for rail accessibility is 13.3% (5.8/43.75) and for bus accessibility is 5.9% (2.6/43.75).

Alternate:

- 15% reduction in vehicle trips
- 2 to 5 times higher transit mode share

TCRP Report 128 [4] concludes that transit-oriented developments, compared to typical developments represented by the *ITE Trip Generation Manual*, have 47% lower vehicle trip rates and have 2 to 5 times higher transit mode share. *TCRP Report 128* notes that the *ITE Trip Generation Manual* shows 6.67 daily trips per unit while detailed counts of 17 residential TODs resulted in 3.55 trips per unit (a 47% reduction in vehicle trips). This study looks at mid-rise and high-rise apartments at the residential TOD sites. A more conservative comparison would be to look at the *ITE Trip Generation Manual* rates for high-rise apartments, 4.2 trips per unit. This results in a 15% reduction in vehicle trips.

Alternative Literature References:

- [2] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.
- [3] Bailey, L., Mokhtarian, P.L., & Little, A. (2008). "The Broader Connection between Public Transportation, Energy Conservation and Greenhouse Gas Reduction." ICF International. (Table 4 and 5)
- [4] TCRP, 2008. *TCRP Report 128 - Effects of TOD on Housing, Parking, and Travel*. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_128.pdf (p. 11, 69).



Transportation

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MP# LU-1,LU-4

LUT-5

Land Use / Location

Other Literature Reviewed:

None

Transportation

CEQA# MM D-7
MP# LU-2.1.8

LUT-6

Land Use / Location

3.1.6 Integrate Affordable and Below Market Rate Housing

Range of Effectiveness: 0.04 – 1.20% vehicle miles traveled (VMT) reduction and therefore 0.04-1.20% reduction in GHG emissions.

Measure Description:

Income has a statistically significant effect on the probability that a commuter will take transit or walk to work [4]. BMR housing provides greater opportunity for lower income families to live closer to jobs centers and achieve jobs/housing match near transit. It also addresses to some degree the risk that new transit oriented development would displace lower income families. This strategy potentially encourages building a greater percentage of smaller units that allow a greater number of families to be accommodated on infill and transit-oriented development sites within a given building footprint and height limit. Lower income families tend to have lower levels of auto ownership, allowing buildings to be designed with less parking which, in some cases, represents the difference between a project being economically viable or not.

Residential development projects of five or more dwelling units will provide a deed-restricted low-income housing component on-site.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context unless transit availability and proximity to jobs/services are existing characteristics
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$\text{CO}_2 = \text{VMT} \times \text{EF}_{\text{running}}$$

Where:

VMT = vehicle miles traveled

for running emissions

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of units in project that are deed-restricted BMR housing

Transportation

CEQA# MM D-7
MP# LU-2.1.8

LUT-6

Land Use / Location

Mitigation Method:

% VMT Reduction = 4% * Percentage of units in project that are deed-restricted BMR housing [1]

Assumptions:

Data based upon the following references:

- [1] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p.15).
<http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf>
 Criterion Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.
 Holtzclaw, John; Clear, Robert; Dittmar, Hank; Goldstein, David; and Haas, Peter (2002), "Location Efficiency: Neighborhood and Socio-Economic Characteristics Determine Auto Ownership and Use – Studies in Chicago, Los Angeles and San Francisco", *Transportation Planning and Technology*, 25 (1): 1-27.

All trips affected are assumed average trip lengths to convert from percentage vehicle trip reduction to VMT reduction (%VT = %VMT)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁴²
CO ₂ e	0.04 – 1.20% of running
PM	0.04 – 1.20% of running
CO	0.04 – 1.20% of running
NOx	0.04 – 1.20% of running
SO ₂	0.04 – 1.20% of running
ROG	0.024 – 0.72% of total

Discussion:

At a low range, 1% BMR housing is assumed. At a medium range, 15% is assumed (based on the requirements of the San Francisco BMR Program[5]). At a high range, the San Francisco program is doubled to reach 30% BMR. Higher percentages of BMR are possible, though not discussed in the literature or calculated.

⁴² The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

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LUT-6

Land Use / Location

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction = $4\% * 1\% = 0.04\%$
- High Range % VMT Reduction = $4\% * 30\% = 1.20\%$

Preferred Literature:

Nelson\Nygaard [1] provides a 4% reduction in vehicle trips for each deed-restricted BMR unit. This is calculated from Holtzclaw [3], with the following assumptions: 12,000 average annual VMT per vehicle, \$33,000 median per capita income (2002 figures per CA State Department of Finance), and average income in BMR units 25% below median. With a coefficient of -0.0565 (estimate for VMT/vehicle as a function of \$/capita) from [3], the VMT reduction is $0.0565 * 33,000 * 0.25 / 12,000 = 4\%$.

Alternative Literature:

- 50% greater transit school trips than higher income households

Fehr & Peers [6] developed Direct Ridership Models to predict the Bay Area Rapid Transit (BART) ridership activity. One of the objectives of this assessment was to understand the land use and system access factors that influence commute period versus off-peak travel on BART. The analysis focused on the Metropolitan Transportation Commission 2000 Bay Area Travel Survey [7], using the data on household travel behavior to extrapolate relationships between household characteristics and BART mode choice. The study found that regardless of distance from BART, lower income households generate at least 50% higher BART use for school trips than higher income households. More research would be needed to provide more applicable information regarding other types of transit throughout the state.

Other Literature Reviewed:

- [4] Bento, Antonio M., Maureen L. Cropper, Ahmed Mushfiq Mobarak, and Katja Vinha. 2005. "The Effects of Urban Spatial Structure on Travel Demand in the United States." *The Review of Economics and Statistics* 87,3: 466-478. (cited in Measure Description section)
- [5] San Francisco BMR Program: http://www.ci.sf.ca.us/site/moh_page.asp?id=48083 (p.1) (cited in Discussion section).
- [6] Fehr & Peers. *Access BART*. 2006.
- [7] BATS. 2000. 2000 Bay Area Travel Survey.

Transportation

MP# LU-4.2

LUT-7

Land Use / Location

3.1.7 Orient Project Toward Non-Auto Corridor

Range of Effectiveness: Grouped strategy. [See LUT-3]

Measure Description:

A project that is designed around an existing or planned transit, bicycle, or pedestrian corridor encourages alternative mode use. For this measure, the project is oriented towards a planned or existing transit, bicycle, or pedestrian corridor. Setback distance is minimized.

The benefits of Orientation toward Non-Auto Corridor have not been sufficiently quantified in the existing literature. This measure is most effective when applied in combination of multiple design elements that encourage this use. There is not sufficient evidence that this measure results in non-negligible trip reduction unless combined with measures described elsewhere in this report, including neighborhood design, density and diversity of development, transit accessibility and pedestrian and bicycle network improvements. Therefore, the trip reduction percentages presented below should be used only as reasonableness checks. They may be used to assess whether, when applied to projects oriented toward non-auto corridors, analysis of all of those other development design factors presented in this report produce trip reductions at least as great as the percentages listed below.

Measure Applicability:

- Urban or suburban context; may be applicable in a master-planned rural community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.25 – 0.5% reduction in vehicle miles traveled (VMT)

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions attributes 0.5% reduction for a project oriented towards an *existing* corridor. A 0.25% reduction is attributed for a project oriented towards a *planned* corridor. The planned transit, bicycle, or pedestrian corridor must be in a General Plan, Community Plan, or similar plan.

Alternate:

- 0.5% reduction in VMT per 1% improvement in transit frequency
- 0.5% reduction in VMT per 10% increase in transit ridership



Transportation

MP# LU-4.2

LUT-7

Land Use / Location

The *Center for Clean Air Policy (CCAP) Guidebook* [2] attributes a 0.5 % reduction per 1% improvement in transit frequency. Based on a case study presented in the CCAP report, a 10% increase in transit ridership would result in a 0.5% reduction. (This information is based on a TIAX review for SMAQMD).

The sources cited above reflect existing guidance rather than empirical studies.

Alternative Literature References:

[1] Sacramento Metropolitan Air Quality Management District (SMAQMD).
"Recommended Guidance for Land Use Emission Reductions."
<http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf>

[2] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*.
http://www.ccap.org/safe/guidebook/guide_complete.html
TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of
SMAQMD

Other Literature Reviewed:

None

Transportation

LUT-8

Land Use / Location

3.1.8 Locate Project near Bike Path/Bike Lane

Range of Effectiveness: Grouped strategy. [See LUT-4]

Measure Description:

A Project that is designed around an existing or planned bicycle facility encourages alternative mode use. The project will be located within 1/2 mile of an existing Class I path or Class II bike lane. The project design should include a comparable network that connects the project uses to the existing offsite facilities.

This measure is most effective when applied in combination of multiple design elements that encourage this use. Refer to Increase Destination Accessibility (LUT-4) strategy. The benefits of Proximity to Bike Path/Bike Lane are small as a standalone strategy. The strategy should be grouped with the Increase Destination Accessibility strategy to increase the opportunities for multi-modal travel.

Measure Applicability:

- Urban or suburban context; may be applicable in a rural master planned community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.625% reduction in vehicle miles traveled (VMT)

As a rule of thumb, the *Center for Clean Air Policy (CCAP) Guidebook* [1] attributes a 1% to 5% reduction associated with comprehensive bicycle programs. Based on the CCAP guidebook, the TIAX report allots 2.5% reduction for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

Alternative Literature References:

[1] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD.

Other Literature Reviewed:

None

Transportation

LUT-8

Land Use / Location

3.1.9 Improve Design of Development

Range of Effectiveness: 3.0 – 21.3% vehicle miles traveled (VMT) reduction and therefore 3.0-21.3% reduction in GHG emissions.

Measure Description:

The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Number of intersections per square mile

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Intersections} * B$$

Where

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Intersections = Percentage increase in intersections versus a typical ITE suburban development

$$= \frac{\text{Intersections per square mile of project} - \text{Intersections per square mile of typical ITE suburban development}}{\text{Intersections per square mile of typical ITE suburban development}}$$

$$= \frac{\text{Intersections per square mile of project} - 36}{36}$$

See Appendix C for detail [not to exceed 500% increase]

B = Elasticity of VMT with respect to percentage of intersections (0.12 from [1])

Assumptions:

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁴³
CO ₂ e	3.0 – 21.3% of running
PM	3.0 – 21.3% of running
CO	3.0 – 21.3% of running
NO _x	3.0 – 21.3% of running
SO ₂	3.0 – 21.3% of running
ROG	1.8 – 12.8% of total

Discussion:

The VMT reductions for this strategy are based on changes in intersection density versus the standard suburban intersection density in North America. This standard density is used as a baseline to mirror the density reflected in the *ITE Trip Generation Manual*, which is the baseline method for determining VMT.

The calculations in the Example section look at a low and high range of intersection densities. The low range is simply a slightly higher density than the typical ITE

⁴³ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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development. The high range uses an average intersection density of mixed use/transit-oriented development sites (TOD Site surveys in the Bay Area for *Candlestick-Hunters Point Phase II TIA*, Fehr & Peers, 2009).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of intersections per square mile (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing intersection density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as design). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (45 intersections per square mile) = $(45 - 36) / 36 * 0.12 = 3.0\%$
- High Range % VMT Reduction (100 intersections per square mile) = $(100 - 36) / 36 * 0.12 = 21.3\%$

Preferred Literature:

- -0.12 = elasticity of VMT with respect to design (intersection/street density)
- -0.12 = elasticity of VMT with respect to design (% of 4-way intersections)

Ewing and Cervero's [1] synthesis showed a strong relationship of VMT to design elements, second only to destination accessibility. The weighted average elasticity of VMT to intersection/street density was -0.12 (looking at six studies). The weighted average elasticity of VMT to percentage of 4-way intersections was -0.12 (looking at four studies, of which one controlled for self-selection⁴⁴).

Alternative Literature:

Alternate:

- 2-19% reduction in VMT

⁴⁴ Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

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Growing Cooler [2] looked at various reports which studied the effect of site design on VMT, showing a range of 2-19% reduction in VMT. In each case, alternative development plans for the same site were compared to a baseline or trend plan. Results suggest that VMT and CO₂ per capita decline as site density increases as well as the mix of jobs, housing, and retail uses become more balanced. *Growing Cooler* notes that the limited number of studies, differences in assumptions and methodologies, and variability of results make it difficult to generalize.

Alternate:

- 3 – 17% shift in mode share from auto to non-auto

The Marshall and Garrick paper [3] analyzes the differences in mode shares for grid and non-grid (“tree”) neighborhoods. For a city with a tributary tree street network, a neighborhood with a tree network had auto mode share of 92% while a neighborhood with a grid network had auto mode share of 89% (3% difference). For a city with a tributary radial street network, a tree neighborhood had auto mode share of 97% while a grid neighborhood had auto mode share of 84% (13% difference). For a city with a grid network, a tree neighborhood had auto mode share of 95% while a grid neighborhood had auto mode share of 78% (17% difference). The research is based on 24 California cities with populations between 30,000 and 100,000.

Alternative Literature References:

- [2] Ewing, et al, 2008. *Growing Cooler – The Evidence on Urban Development and Climate Change*. Urban Land Institute.
- [3] Marshall and Garrick, 2009. “The Effect of Street Network Design on Walking and Biking.” Submitted to the 89th Annual Meeting of Transportation Research Board, January 2010. (Table 3)

Other Literature Reviewed:

None

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3.2 Neighborhood/Site Enhancements

3.2.1 Provide Pedestrian Network Improvements

Range of Effectiveness: 0 - 2% vehicle miles traveled (VMT) reduction and therefore 0 - 2% reduction in GHG emissions.

Measure Description:

Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The project applicant must provide information regarding pedestrian access and connectivity within the project and to/from off-site destinations.

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Mitigation Method:

Estimated VMT Reduction	Extent of Pedestrian Accommodations	Context
2%	Within Project Site and Connecting Off-Site	Urban/Suburban
1%	Within Project Site	Urban/Suburban
< 1%	Within Project Site and Connecting Off-Site	Rural

Assumptions:

Data based upon the following references:

- Center for Clean Air Policy (CCAP) Transportation Emission Guidebook. http://www.ccap.org/safe/guidebook/guide_complete.html (accessed March 2010)
- 1000 Friends of Oregon (1997) "Making the Connections: A Summary of the LUTRAQ Project" (p. 16): http://www.onethousandfriendsoforegon.org/resources/lut_vol7.html

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁴⁵
CO ₂ e	0 - 2% of running
PM	0 - 2% of running
CO	0 - 2% of running
NO _x	0 - 2% of running
SO ₂	0 - 2% of running
ROG	0 – 1.2% of total

Discussion:

As detailed in the preferred literature section below, the lower range of 1 – 2% VMT reduction was pulled from the literature to provide a conservative estimate of reduction potential. The literature does not speak directly to a rural context, but an assumption was made that the benefits will likely be lower than a suburban/urban context.

Example:

N/A – calculations are not needed.

Preferred Literature:

⁴⁵ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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- 1 - 2% reduction in VMT

The Center for Clean Air Policy (CCAP) attributes a 1% reduction in VMT from pedestrian-oriented design assuming this creates a 5% decrease in automobile mode share (e.g. auto split shifts from 95% to 90%). This mode split is based on the Portland Regional Land Use Transportation and Air Quality (LUTRAQ) project. The LUTRAQ analysis also provides the high end of 10% reduction in VMT. This 10% assumes the following features:

– communities	Compact, mixed-use
– network	Interconnected street
– shorter block lengths	Narrower roadways and
–	Sidewalks
– transit shelters	Accessibility to transit and
– and street trees	Traffic calming measures
–	Parks and public spaces

Other strategies (development density, diversity, design, transit accessibility, traffic calming) are intended to account for the effects of many of the measures in the above list. Therefore, the assumed effectiveness of the Pedestrian Network measure should utilize the lower end of the 1 - 10% reduction range. If the pedestrian improvements are being combined with a significant number of the companion strategies, trip reductions for those strategies should be applied as well, based on the values given specifically for those strategies in other sections of this report. Based upon these findings, and drawing upon recommendations presented in the alternate literature below, the recommended VMT reduction attributable to pedestrian network improvements, above and beyond the benefits of other measures in the above bullet list, should be 1% for comprehensive pedestrian accommodations within the development plan or project itself, or 2% for comprehensive internal accommodations and external accommodations connecting to off-site destinations.

Alternative Literature:

Alternate:

- Walking is three times more common with enhanced pedestrian infrastructure
- 58% increase in non-auto mode share for work trips

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The Nelson\Nygaard [1] report for the City of Santa Monica Land Use and Circulation Element EIR summarized studies looking at pedestrian environments. These studies have found a direct connection between non-auto forms of travel and a high quality pedestrian environment. Walking is three times more common with communities that have pedestrian friendly streets compared to less pedestrian friendly communities. Non-auto mode share for work trips is 49% in a pedestrian friendly community, compared to 31% in an auto-oriented community. Non-auto mode share for non-work trips is 15%, compared to 4% in an auto-oriented community. However, these effects also depend upon other aspects of the pedestrian friendliness being present, which are accounted for separately in this report through land use strategy mitigation measures such as density and urban design.

Alternate:

- 0.5% - 2.0% reduction in VMT

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions [2] attributes 1% reduction for a project connecting to *existing* external streets and pedestrian facilities. A 0.5% reduction is attributed to connecting to *planned* external streets and pedestrian facilities (which must be included in a pedestrian master plan or equivalent). Minimizing pedestrian barriers attribute an additional 1% reduction in VMT. These recommendations are generally in line with the recommended discounts derived from the preferred literature above.

Preferred and Alternative Literature Notes:

[1] Nelson\Nygaard, 2010. City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis (p.401). <http://www.shapethefuture2025.net/>

Nelson\Nygaard looked at the following studies: Anne Vernez Moudon, Paul Hess, Mary Catherine Snyder and Kiril Stanilov (2003), Effects of Site Design on Pedestrian Travel in Mixed Use, Medium-Density Environments, <http://www.wsdot.wa.gov/research/reports/fullreports/432.1.pdf>; Robert Cervero and Carolyn Radisch (1995), Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods, <http://www.uctc.net/papers/281.pdf>;

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 11) <http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf>

Other Literature Reviewed:

None

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3.2.2 Provide Traffic Calming Measures

Range of Effectiveness: 0.25 – 1.00% vehicle miles traveled (VMT) reduction and therefore 0.25 – 1.00% reduction in GHG emissions.

Measure Description:

Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$\text{CO}_2 = \text{VMT} \times \text{EF}_{\text{running}}$$

Where:

traveled
for running emissions

VMT = vehicle miles
EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of streets within project with traffic calming improvements
- Percentage of intersections within project with traffic calming improvements

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Mitigation Method:

		% of streets with improvements			
		25%	50%	75%	100%
		% VMT Reduction			
% of intersections with improvements	25%	0.25%	0.25%	0.5%	0.5%
	50%	0.25%	0.5%	0.5%	0.75%
	75%	0.5%	0.5%	0.75%	0.75%
	100%	0.5%	0.75%	0.75%	1%

Assumptions:

Data based upon the following references:

- [1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* (p. B-25)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf
- [2] Sacramento Metropolitan Air Quality Management District (SMAQMD)
Recommended Guidance for Land Use Emission Reductions. (p.13)
<http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf>

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁴⁶
CO ₂ e	0.25 – 1.00% of running
PM	0.25 – 1.00% of running
CO	0.25 – 1.00% of running
NO _x	0.25 – 1.00% of running
SO ₂	0.25 – 1.00% of running
ROG	0.15 – 0.6% of total

Discussion:

The table above allows the Project Applicant to choose a range of street and intersection improvements to determine an appropriate VMT reduction estimate. The Applicant will look at the rows on the left and choose the percent of intersections within

⁴⁶ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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the project which will have traffic calming improvements. Then, the Applicant will look at the columns along the top and choose the percent of streets within the project which will have traffic calming improvements. The intersection cell of the row and column selected in the matrix is the VMT reduction estimate.

Though the literature provides some difference between a suburban and urban context, the difference is small and thus a conservative estimate was used to be applied to all contexts. Rural context is not specifically discussed in the literature but is assumed to have similar impacts.

For a low range, a project is assumed to have 25% of its streets with traffic calming improvements and 25% of its intersections with traffic calming improvements. For a high range, 100% of streets and intersections are assumed to have traffic calming improvements

Example:

N/A - No calculations needed.

Preferred Literature:

- -0.03 = elasticity of VMT with respect to a pedestrian environment factor (PEF)
- 1.5% - 2.0% reduction in suburban VMT
- 0.5% - 0.6% reduction in urban VMT

Moving Cooler [1] looked at Ewing's synthesis elasticity from the Smart Growth INDEX model (-0.03) to estimate VMT reduction for a suburban and urban location. The estimated reduction in VMT came from looking at the difference between the VMT results for Moving Cooler's strategy of pedestrian accessibility only compared to an aggressive strategy of pedestrian accessibility and traffic calming.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions* [2] attributes 0.25 – 1% of VMT reductions to traffic calming measures. The table above illustrates the range of VMT reductions based on the percent of streets and intersections with traffic calming measures implemented. This range of reductions is recommended because it is generally consistent with the effectiveness ranges presented in the other preferred literature for situations in which the effects of traffic calming are distinguished from the other measures often found to co-exist with calming, and because it provides graduated effectiveness estimates depending on the degree to which calming is implemented.

Alternative Literature:

None



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Alternative Literature References:

None

Other Literature Reviewed:

None

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3.2.3 Implement a Neighborhood Electric Vehicle (NEV) Network

Range of Effectiveness: 0.5-12.7% vehicle miles traveled (VMT) reduction since Neighborhood Electric Vehicles (NEVs) would result in a mode shift and therefore reduce the traditional vehicle VMT and GHG emissions⁴⁷. Range depends on the available NEV network and support facilities, NEV ownership levels, and the degree of shift from traditional

Measure Description:

The project will create local "light" vehicle networks, such as NEV networks. NEVs are classified in the California Vehicle Code as a "low speed vehicle". They are electric powered and must conform to applicable federal automobile safety standards. NEVs offer an alternative to traditional vehicle trips and can legally be used on roadways with speed limits of 35 MPH or less (unless specifically restricted). They are ideal for short trips up to 30 miles in length. To create an NEV network, the project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage, and educational tools. NEV routes will be implemented throughout the project and will double as bicycle routes.

Measure Applicability:

- Urban, suburban, and rural context
- Small citywide or large multi-use developments
- Appropriate for mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

⁴⁷ Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

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Inputs:

The following information needs to be provided by the Project Applicant:

- low vs. high penetration

Mitigation Method:

$$\% \text{ VMT reduction} = \text{Pop} * \text{Number} * \text{NEV}$$

Where

Penetration	=	Number of NEVs per household (0.04 to 1.0 from [1])
NEV	=	VMT reduction rate per household (12.7% from [2])

Assumptions:

Data based upon the following reference:

[1] City of Lincoln, MHM Engineers & Surveyors, *Neighborhood Electric Vehicle Transportation Program Final Report*, Issued 04/05/05

[2] City of Lincoln, *A Report to the California Legislature as required by Assembly Bill 2353, Neighborhood Electric Vehicle Transportation Plan Evaluation*, January 1, 2008.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁴⁸
CO ₂ e	0.5 – 12.7% of running
PM	0.5 – 12.7% of running
CO	0.5 – 12.7% of running
NOx	0.5 – 12.7% of running
SO ₂	0.5 – 12.7% of running
ROG	0.3 – 7.6% of total

Discussion:

The estimated number of NEVs per household may vary based on what the project estimates as a penetration rate for implementing an NEV network. Adjust according to project characteristics. The estimated reduction in VMT is for non-NEV miles traveled. The calculations below assume that NEV miles traveled replace regular vehicle travel.

⁴⁸ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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This may not be the case and the project should consider applying an appropriate discount rate on what percentage of VMT is actually replaced by NEV travel..

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low penetration) = $0.04 * 12.7\% = 0.5\%$
- High Range % VMT Reduction (high penetration) = $1.0 * 12.7\% = 12.7\%$

Preferred Literature:

- 12.7% reduction in VMT per household
- Penetration rates: 0.04 to 1 NEV / household

The NEV Transportation Program plans to implement the following strategies: charging facilities, striping, signage, parking, education on NEV safety, and NEV/bicycle lines throughout the community. . One estimate of current NEV ownership reported roughly 600 NEVs in the city of Lincoln in 2008⁴⁹. With current estimated households of ~13,500⁵⁰, a low estimate of NEV penetration would be 0.04 NEV per household. A high NEV penetration can be estimated at 1 NEV per household. The 2007 survey of NEV users in Lincoln revealed an average use of about 3,500 miles per year [2]. With an estimated annual 27,500 VMT/household⁵¹, this results in a 12.7% reduction in VMT per household.

Alternative Literature:

- 0.5% VMT reduction for neighborhoods with internal NEV connections
- 1% VMT reduction for internal and external connections to surrounding neighborhoods
- 1.5% VMT reduction for internal NEV connections and connections to other existing NEV networks serving all other types of uses.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions notes that current studies show NEVs do not replace gas-fueled vehicles as the primary vehicle. For the purpose

⁴⁹ Lincoln, California: A NEV-Friendly Community, Bennett Engineering, the City of Lincoln, and LincolnNEV, August 28, 2008 - <http://electrickmotorsports.com/news.php>

⁵⁰ SACOG Housing Estimates Statistics (http://www.sacog.org/about/advocacy/pdf/fact_sheets/HousingStats.pdf). Linearly interpolated 2008 household numbers between 2005 and 2035 projections.

⁵¹ SACOG SACSIm forecasts for VMT per household at 75.4 daily VMT per household * 365 days = 27521 annual VMT per household

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of providing incentives for developers to promote NEV use, a project will receive the above listed VMT reductions for implementation.

Alternative Literature Reference:

- [1] Sacramento Metropolitan Air Quality Management District (SMAQMD)
Recommended Guidance for Land Use Emission Reductions. (p. 21)
<http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf>

Other Literature Reviewed:

None

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3.2.4 Create Urban Non-Motorized Zones

Range of Effectiveness: Grouped strategy. [See SDT-1]

Measure Description:

The project, if located in a central business district (CBD) or major activity center, will convert a percentage of its roadway miles to transit malls, linear parks, or other non-motorized zones. These features encourage non-motorized travel and thus a reduction in VMT.

This measure is most effective when applied with multiple design elements that encourage this use. Refer to Pedestrian Network Improvements (SDT-1) strategy for ranges of effectiveness in this category. The benefits of Urban Non-Motorized Zones alone have not been shown to be significant.

Measure Applicability:

- Urban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.01 – 0.2% annual Vehicle Miles Traveled (VMT) reduction

Moving Cooler [1] assumes 2 – 6% of U.S. CBDs/activity centers will convert to non-motorized zones for the purpose of calculating the potential impact. At full implementation, this would result in a range of CBD/activity center annual VMT reduction of 0.07-0.2% and metro VMT reduction of 0.01-0.03%.

Alternate:

Pucher, Dill, and Handy (2010) [2] note several international case studies of urban non-motorized zones. In Bologna, Italy, vehicle traffic declined by 50%, and 8% of those arriving in the CBD came by bicycle after the conversion. In Lubeck, Germany, of those who used to drive, 12% switched to transit, walking, or bicycling with the conversion. In Aachen, Germany, car travel declined from 44% to 36%, but bicycling stayed constant at 3%

Notes:

No literature was identified that quantifies the benefits of this strategy at a smaller scale.



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Alternative Literature References:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute.

http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[2] Pucher J., Dill, J., and Handy, S. *Infrastructure, Programs and Policies to Increase Bicycling: An International Review*. February 2010. *Preventive Medicine 50 (2010) S106–S125*.

http://policy.rutgers.edu/faculty/pucher/Pucher_Dill_Handy10.pdf

Other Literature Reviewed:

None



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3.2.5 Incorporate Bike Lane Street Design (on-site)

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

The project will incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the “catchment area” of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily-used and/or heavily-subsidized feeder bus lines and auto-oriented park-and-ride facilities.

Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness levels. The benefits of Bike Lane Street Design are small and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and enhance multi-modal environments.

Measure Applicability:

- Urban and suburban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 1% increase in share of workers commuting by bicycle (for each additional mile of bike lanes per square mile)

Dill and Carr (2003) [1] showed that each additional mile of Type 2 bike lanes per square mile is associated with a 1% increase in the share of workers commuting by bicycle. Note that increasing by 1 mile is significant compared to the current average of 0.34 miles per square mile. Also, an increase in 1% in share of bicycle commuters would double the number of bicycle commuters in many areas with low existing bicycle mode share.

Alternate:

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

Moving Cooler [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle

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lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.

Alternate:

- 0.075% increase in bicycle commuting with each mile of bikeway per 100,000 residents

A before-and-after study by Nelson and Allen (1997) [3] of bicycle facility implementation found that each mile of bikeway per 100,000 residents increases bicycle commuting 0.075%, all else being equal.

Alternative Literature References:

[1] Dill, Jennifer and Theresa Carr (2003). "Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Them, Commuters Will Use Them – Another Look." *TRB 2003 Annual Meeting CD-ROM*.

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute.
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[3] Nelson, Arthur and David Allen (1997). "If You Build Them, Commuters Will Use Them; Cross-Sectional Analysis of Commuters and Bicycle Facilities." *Transportation Research Record 1578*.

Other Literature Reviewed:

None

Transportation

CEQA# MM T-1
MP# TR-4.1

SDT-6

Neighborhood / Site
Enhancement

3.2.6 Provide Bike Parking in Non-Residential Projects

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

A non-residential project will provide short-term and long-term bicycle parking facilities to meet peak season maximum demand. Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness ranges. Bike Parking in Non-Residential Projects has minimal impacts as a standalone strategy and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Measure Applicability:

- Urban, suburban, and rural contexts
- Appropriate for retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 0.625% reduction in Vehicle Miles Traveled (VMT)

As a rule of thumb, the Center for Clean Air Policy (CCAP) guidebook [1] attributes a 1% to 5% reduction in VMT to the use of bicycles, which reflects the assumption that their use is typically for shorter trips. Based on the *CCAP Guidebook*, the TIAX report allots 2.5% reduction for all bicycle-related measures and a quarter of that for this bicycle parking alone. (This information is based on a TIAX review for Sacramento Metropolitan Air Quality Management District (SMAQMD).)

Alternate:

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

Moving Cooler [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, *Moving Cooler* estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, *Moving Cooler* estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.



Transportation

CEQA# MM T-1
MP# TR-4.1

SDT-6

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Alternative Literature References:

- [1] *Center For Clean Air Policy (CCAP) Transportation Emission Guidebook*.
http://www.ccap.org/safe/guidebook/guide_complete.html; Based on results of 2005 literature search conducted by TIAX on behalf of SMAQMD.
- [2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute.
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

Transportation

CEQA# MM T-3
MP# TR-4.1.2

SDT-7

**Neighborhood / Site
Enhancement**

3.2.7 Provide Bike Parking with Multi-Unit Residential Projects

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

Long-term bicycle parking will be provided at apartment complexes or condominiums without garages. Refer to Improve Design of Development (LUT-9) strategy for effectiveness ranges in this category. The benefits of Bike Parking with Multi-Unit Residential Projects have no quantified impacts and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

Measure Applicability:

- Urban, suburban, or rural contexts
- Appropriate for residential projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of including bicycle parking at multi-unit residential sites.

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

CEQA# MM T-17 & E-11
MP# TR-5.4

SDT-8

**Neighborhood / Site
Enhancement**

3.2.8 Provide Electric Vehicle Parking

Range of Effectiveness: Grouped strategy. [See SDT-3]

Measure Description:

This project will implement accessible electric vehicle parking. The project will provide conductive/inductive electric vehicle charging stations and signage prohibiting parking for non-electric vehicles. Refer to Neighborhood Electric Vehicle Network (SDT-3) strategy for effectiveness ranges in this category. The benefits of Electric Vehicle Parking may be quantified when grouped with the use of electric vehicles and or Neighborhood Electric Vehicle Network.

Measure Applicability:

- Urban or suburban contexts
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of implementing electric vehicle parking.

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

MP# TR-4.1

SDT-9

**Neighborhood / Site
Enhancement**

3.2.9 Dedicate Land for Bike Trails

Range of Effectiveness: Grouped strategy. [See LUT-9]

Measure Description:

Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan.

Refer to Improve Design of Development (LUT-9) strategy for ranges of effectiveness in this category. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks.

Measure Applicability:

- Urban, suburban, or rural contexts
- Appropriate for large residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of implementing land dedication for bike trails.

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

MP# LU-1.7 & LU-2.1.1.4

PDT-1

Parking Policy / Pricing

3.3 Parking Policy/Pricing

3.3.1 Limit Parking Supply

Range of Effectiveness: 5 – 12.5% vehicle miles travelled (VMT) reduction and therefore 5 – 12.5% reduction in GHG emissions.

Measure Description:

The project will change parking requirements and types of supply within the project site to encourage “smart growth” development and alternative transportation choices by project residents and employees. This will be accomplished in a multi-faceted strategy:

- Elimination (or reduction) of minimum parking requirements⁵²
- Creation of maximum parking requirements
- Provision of shared parking

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction can be counted only if spillover parking is controlled (via residential permits and on-street market rate parking) [See PPT-5 and PPT-7]

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

VMT = vehicle miles traveled
 EF_{running} = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- ITE parking generation rate for project site
- Actual parking provision rate for project site

⁵² This may require changes to local ordinances and regulations.

Transportation

MP# LU-1.7 & LU-2.1.1.4

PDT-1

Parking Policy / Pricing

Mitigation Method:

$$\% \text{ VMT Reduction} = \frac{\text{Actual parking provision} - \text{ITE parking generation rate}}{\text{ITE parking generation rate}} \times 0.5$$

Assumptions:

Data based upon the following references:

- [1] Nelson\Nygaard, 2005. Crediting Low-Traffic Developments (p. 16)
<http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf>

All trips affected are assumed average trip lengths to convert from percentage vehicle trip reduction to VMT reduction (% vehicle trips = %VMT).

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵³
CO ₂ e	5 – 12.5% of running
PM	5 – 12.5% of running
CO	5 – 12.5% of running
NO _x	5 – 12.5% of running
SO ₂	5 – 12.5% of running
ROG	3 – 7.5% of total

Discussion:

The literature suggests that a 50% reduction in conventional parking provision rates (per ITE rates) should serve as a typical ceiling for the reduction calculation. The upper range of VMT reduction will vary based on the size of the development (total number of spaces provided). ITE rates are used as baseline conditions to measure the effectiveness of this strategy.

Though not specifically documented in the literature, the degree of effectiveness of this measure will vary based on the level of urbanization of the project and surrounding areas, level of existing transit service, level of existing pedestrian and bicycle networks and other factors which would complement the shift away from single-occupant vehicle travel.

⁵³ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis.

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MP# LU-1.7 & LU-2.1.1.4

PDT-1

Parking Policy / Pricing

Example:

If the ITE parking generation rate for the project is 100 spaces, for a low range a 5% reduction in spaces is assumed. For a high range a 25% reduction in spaces is assumed.

- Low range % VMT Reduction = $[(100 - 95)/100] * 0.5 = 2.5\%$
- High range % VMT Reduction = $[(100 - 75)/100] * 0.5 = 12.5\%$

Preferred Literature:

To develop this model, Nelson\Nygaard [1] used the Institute of Transportation Engineers' *Parking Generation* handbook as the baseline figure for parking supply. This is assumed to be unconstrained demand. Trip reduction should only be credited if measures are implemented to control for spillover parking in and around the project, such as residential parking permits, metered parking, or time-limited parking.

Alternative Literature:

- 100% increase in transit ridership
- 100% increase in transit mode share

According to *TCRP Report 95, Chapter 18* [2], the central business district of Portland, Oregon implemented a maximum parking ratio of 1 space per 1,000 square feet of new buildings and implemented surface lot restrictions which limited conditions where buildings could be razed for parking. A "before and after" study was not conducted specifically for the maximum parking requirements and data comes from various surveys and published reports. Based on rough estimates the approximate parking ratio of 3.4 per 1,000 square feet in 1973 (for entire downtown) had been reduce to 1.5 by 1990. Transit mode share increased from 20% to 40%. The increases in transit ridership and mode share are not solely from maximum parking requirements. Other companion strategies, such as market parking pricing and high fuel costs, were in place.

Alternative Literature Sources:

[1] TCRP Report 95, Chapter 18: Parking Management and Supply: Traveler Response to *Transportation System Changes*. (p. 18-6)

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c18.pdf

Other Literature Reviewed:

None

3.3.2 Unbundle Parking Costs from Property Cost

Range of Effectiveness: 2.6 – 13% vehicles miles traveled (VMT) reduction and therefore 2.6 – 13% reduction in GHG emissions.

Measure Description:

This project will unbundle parking costs from property costs. Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost. This removes the burden from those who do not wish to utilize a parking space. Parking will be priced separately from home rents/purchase prices or office leases. An assumption is made that the parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Complementary strategy includes Workplace Parking Pricing. Though not required, implementing workplace parking pricing ensures the market signal from unbundling parking is transferred to the employee.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Monthly parking cost for project site

Mitigation Method:

$$\% \text{ Reduction in VMT} = \text{Change in vehicle cost} * \text{elasticity} * A$$

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MP# LU-1.7

PDT-2

Parking Policy / Pricing

Where:

- -0.4 = elasticity of vehicle ownership with respect to total vehicle costs (lower end per VTPI)
- Change in vehicle cost = monthly parking cost * (12 / \$4,000), with \$4,000 representing the annual vehicle cost per VTPI [1]
- A: 85% = adjustment from vehicle ownership to VMT (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Victoria Transport Policy Institute, *Parking Requirement Impacts on Housing Affordability*; <http://www.vtpi.org/park-hou.pdf>; January 2009; accessed March 2010. (Annual/monthly parking fees estimated by VTPI in 2009) (p. 8, Table 3)

- For the elasticity of vehicle ownership, VTPI cites Phil Goodwin, Joyce Dargay and Mark Hanly (2003), *Elasticities Of Road Traffic And Fuel Consumption With Respect To Price And Income: A Review*, ESRC Transport Studies Unit, University College London (www.transport.ucl.ac.uk), commissioned by the UK Department of the Environment, Transport and the Regions (now UK Department for Transport); J.O. Jansson (1989), "Car Demand Modeling and Forecasting," *Journal of Transport Economics and Policy*, May 1989, pp. 125-129; Stephen Glaister and Dan Graham (2000), *The Effect of Fuel Prices on Motorists*, AA Motoring Policy Unit (www.theaa.com) and the UK Petroleum Industry Association (http://195.167.162.28/policyviews/pdf/effect_fuel_prices.pdf); and Thomas F. Golob (1989), "The Casual Influences of Income and Car Ownership on Trip Generation by Mode", *Journal of Transportation Economics and Policy*, May 1989, pp. 141-162

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵⁴
CO ₂ e	2.6 – 13% of running
PM	2.6 – 13% of running
CO	2.6 – 13% of running

⁵⁴ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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MP# LU-1.7

PDT-2

Parking Policy / Pricing

NOx	2.6 – 13% of running
SO ₂	2.6 – 13% of running
ROG	1.6 – 7.8% of total

Discussion:

As discussed in the preferred literature section, monthly parking costs typically range from \$25 to \$125. The lower end of the elasticity range provided by VTPI is used here to be conservative.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction = $\$25 * 12 / \$4000 * 0.4 * 85\% = 2.6\%$
- High Range % VMT Reduction = $\$125 * 12 / \$4000 * 0.4 * 85\% = 12.8\%$

Preferred Literature:

- -0.4 to -1.0 = elasticity of vehicle ownership with respect to total vehicle costs

The above elasticity comes from a synthesis of literature. As noted in the VTPI report [1], a 10% increase in total vehicle costs (operating costs, maintenance, fuel, parking, etc.) reduces vehicle ownership between 4% and 10%. The report, estimating \$4,000 in annual costs per vehicle, calculated vehicle ownership reductions from residential parking pricing.

Vehicle Ownership Reductions from Residential Parking Pricing

Annual (Monthly) Parking Fee	-0.4 Elasticity	-0.7 Elasticity	-1.0 Elasticity
\$300 (\$25)	4%	6%	8%
\$600 (\$50)	8%	11%	15%
\$900 (\$75)	11%	17%	23%
\$1,200 (\$100)	15%	23%	30%
\$1,500 (\$125)	19%	28%	38%

Alternative Literature:

None

Alternative Literature Notes:

None

Other Literature Reviewed:

None

3.3.3 Implement Market Price Public Parking (On-Street)

Range of Effectiveness: 2.8 – 5.5% vehicle miles traveled (VMT) reduction and therefore 2.8 – 5.5% reduction in GHG emissions.

Measure Description:

This project and city in which it is located will implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage “park once” behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project-supplied parking to other public parking nearby, which undermine the vehicle miles traveled (VMT) benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for retail, office, and mixed-use projects
- Applicable in a specific or general plan context only
- Reduction can be counted only if spillover parking is controlled (via residential permits)
- Study conducted in a downtown area, and thus should be applied carefully if project is not in a central business/activity center

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Location of project site: low density suburb, suburban center, or urban location

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Parking Policy / Pricing

- Percent increase in on-street parking prices (minimum 25% needed)

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Park\$} * B$$

Where:

Park\$ = Percent increase in on-street parking prices (minimum of 25% increase [1])

B = Elasticity of VMT with respect to parking price (0.11, from [2])

Assumptions:

Data based upon the following references:

- [1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (p. B-10)
 Moving Cooler's parking pricing analysis cited Victoria Transport Policy Institute, *How Prices and Other Factors Affect Travel Behavior* (http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578). The VTPI paper summarized the elasticities found in the Hensher and King paper. David A. Hensher and Jenny King (2001), "Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District," *Transportation Research A*, Vol. 35, No. 3 (www.elsevier.com/locate/tra), March 2001, pp. 177-196.
- [2] J. Peter Clinch and J. Andrew Kelly (2003), *Temporal Variance Of Revealed Preference On-Street Parking Price Elasticity*, Department of Environmental Studies, University College Dublin (www.environmentaleconomics.net). (p. 2) <http://www.ucd.ie/gpep/research/workingpapers/2004/04-02.pdf> As referenced in VTPI: http://www.vtpi.org/tdm/tdm11.htm#_Toc161022578

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵⁵
CO ₂ e	2.8 – 5.5% of running

⁵⁵ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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PDT-3

Parking Policy / Pricing

PM	2.8 – 5.5% of running
CO	2.8 – 5.5% of running
NOx	2.8 – 5.5% of running
SO ₂	2.8 – 5.5% of running
ROG	1.7 – 3.3% of total

Discussion:

The range of parking price increases should be a minimum of 25% and a maximum of 50%. The minimum is based on Moving Cooler [1] discussions which state that a less than 25% increase would not be a sufficient amount to reduce VMT. The case study [2] looked at a 50% price increase, and thus no conclusions can be made on the elasticities above a 50% increase. This strategy may certainly be implemented at a higher price increase, but VMT reductions should be capped at results from a 50% increase to be conservative.

Example:

Assuming a baseline on-street parking price of \$1, sample calculations are provided below:

- Low Range % VMT Reduction (25% increase) = $(\$1.25 - \$1)/\$1 * 0.11 = 2.8\%$
- High Range % VMT Reduction (50% increase) = $(\$1.50 - \$1)/\$1 * 0.11 = 5.5\%$

Preferred Literature:

- -0.11 parking demand elasticity with respect to parking prices

The Clinch & Kelly study [2] of parking meters looked at the impacts of a 50% price increase in the cost of on-street parking. The case study location was a central on-street parking area with a 3-hour time limit and a mix of business and non-business uses. The study concluded the parking increases resulted in an estimated average price elasticity of demand of -0.11, while factoring in parking duration results in an elasticity of -0.2 (cost increases also affect the amount of time cars are parked). Though this study is international (Dublin, Ireland), it represents a solid study of parking meter price increases and provides a conservative estimate of elasticity compared to the alternate literature.

Alternative Literature:

Alternate:

- -0.19 shopper parking elasticity with respect to parking price
- -0.48 commuter parking elasticity with respect to parking price

The *TCRP 95 Chapter 13* [3] report looked at a case study of the city of San Francisco implementing a parking tax on all public and private off-street parking (in 1970). Based on the number of cars parked, the report estimated parking price elasticities of -0.19 to -0.48, an average over a three year period.

Alternate:

- -0.15 VMT elasticity with respect to parking prices (for low density regions)
- -0.47 VMT elasticity with respect to parking prices (for high density regions)

The Moving Cooler analysis assumes a 25 percent increase in on-street parking fees is a starting point sufficient to reduce VMT. Using the elasticities stated above, Moving Cooler estimates an annual percent VMT reduction from 0.42% - 1.14% for a range of regions from a large low density region to a small high density region. The calculations assume that pricing occurs at the urban central business district/employment center/retail center, one-fourth of all person trips are commute based trips, and approximately 15% of commute trips are to the CBD or regional activity centers.

Alternative Literature References:

[3] TCRP Report 95. *Chapter 13: Parking Pricing and Fees - Traveler Response to Transportation System Changes.*
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c13.pdf. (p.13-42)

Other Literature Reviewed:

None

3.3.4 Require Residential Area Parking Permits

Range of Effectiveness: Grouped strategy. (See PPT-1, PPT-2, and PPT-3)

Measure Description:

This project will require the purchase of residential parking permits (RPPs) for long-term use of on-street parking in residential areas. Permits reduce the impact of spillover parking in residential areas adjacent to commercial areas, transit stations, or other locations where parking may be limited and/or priced. Refer to Parking Supply Limitations (PPT-1), Unbundle Parking Costs from Property Cost (PPT-2), or Market Rate Parking Pricing (PPT-3) strategies for the ranges of effectiveness in these categories. The benefits of Residential Area Parking Permits strategy should be combined with any or all of the above mentioned strategies, as providing RPPs are a key complementary strategy to other parking strategies.

Measure Applicability:

- Urban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

- -0.45 = elasticity of vehicle miles traveled (VMT) with respect to price
- 0.08% greenhouse gas (GHG) reduction
- 0.09-0.36% VMT reduction

Moving Cooler [1] suggested residential parking permits of \$100-\$200 annually. This mitigation would impact home-based trips, which are reported to represent approximately 60% of all urban trips. The range of VMT reductions can be attributed to the type of urban area. VMT reductions for \$100 annual permits are 0.09% for large, high-density; 0.12% for large, low-density; 0.12% for medium, high-density; 0.18% for medium, low-density; 0.18% for small, high-density; and 0.12% for small, low-density. VMT reductions for \$200 annual permits are 0.18% for large, high-density; 0.24% for large, low-density; 0.24% for medium, high-density; 0.36% for medium, low-density; 0.36% for small, high-density; and 0.24% for small, low-density.

Alternative Literature References:

- [1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute.
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Transportation

TRT-1

Commute Trip Reduction

3.4 Commute Trip Reduction Programs

3.4.1 Implement Commute Trip Reduction Program - Voluntary

Commute Trip Reduction Program – Voluntary, is a multi-strategy program that encompasses a combination of individual measures described in sections 3.4.3 through 3.4.9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reductions that should be permitted for a combined set of strategies within a voluntary program.

Range of Effectiveness: 1.0 – 6.2% commute vehicle miles traveled (VMT) Reduction and therefore 1.0 – 6.2% reduction in commute trip GHG emissions.

Measure Description:

The project will implement a voluntary Commute Trip Reduction (CTR) program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The main difference between a voluntary and a required program is:

- Monitoring and reporting is not required
- No established performance standards (i.e. no trip reduction requirements)

The CTR program will provide employees with assistance in using alternative modes of travel, and provide both “carrots” and “sticks” to encourage employees. The CTR program should include all of the following to apply the effectiveness reported by the literature:

- Carpooling encouragement
- Ride-matching assistance
- Preferential carpool parking
- Flexible work schedules for carpools
- Half time transportation coordinator
- Vanpool assistance
- Bicycle end-trip facilities (parking, showers and lockers)

Other strategies may also be included as part of a voluntary CTR program, though they are not included in the reductions estimation and thus are not incorporated in the estimated VMT reductions. These include: new employee orientation of trip reduction and alternative mode options, event promotions and publications, flexible work schedule for all employees, transit subsidies, parking cash-out or priced parking, shuttles, emergency ride home, and improved on-site amenities.

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TRT-1

Commute Trip Reduction

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings
- Appropriate for retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$\text{CO}_2 = \text{VMT} \times \text{EF}_{\text{running}}$$

Where:

traveled VMT = vehicle miles
for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % reduction in commute VMT (from [1])

B = % employees eligible

Detail:

- A: 5.2% (low density suburb), 5.4% (suburban center), 6.2% (urban) annual reduction in commute VMT (from [1])

Assumptions:

Data based upon the following references:

Transportation

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Commute Trip Reduction

- Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵⁶
CO ₂ e	1.0 – 6.2% of running
PM	1.0 – 6.2% of running
CO	1.0 – 6.2% of running
NOx	1.0 – 6.2% of running
SO ₂	1.0 – 6.2% of running
ROG	0.6 –3.7% of total

Discussion:

This set of strategies typically serves as a complement to the more effective workplace CTR strategies such as pricing and parking cash out.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low density suburb and 20% eligible) = $5.2\% * 0.2 = 1.0\%$
- High Range % VMT Reduction (urban and 100% eligible) = $6.2\% * 1 = 6.2\%$

Preferred Literature:

- 5.2 - 6.2% commute VMT reduction

Moving Cooler assumes the employer support program will include: carpooling, ride-matching, preferential carpool parking, flexible work schedules for carpools, a half-time transportation coordinator, vanpool assistance, bicycle parking, showers, and locker facilities. The report assigns 5.2% reduction to large metropolitan areas, 5.4% to medium metropolitan areas, and 6.2% to small metropolitan areas.

⁵⁶ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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TRT-1

Commute Trip Reduction

Alternative Literature:

Alternate:

- 15-19% reduction in commute vehicle trips

TCRP 95 Draft Chapter 19 [2] looked at a sample of 82 Transportation Demand Management (TDM) programs. Low support TDM programs had a 15% reduction, medium support programs 15.9%, and high support 19%. Low support programs had little employer effort. These programs may include rideshare matching, distribution of transit flyers, but have little employer involvement. With medium support programs, employers were involved with providing information regarding commute options and programs, a transportation coordinator (even if part-time), and assistance for ridesharing and transit pass purchases. With high support programs, the employer was providing most of the possible strategies. The sample of programs should not be construed as a random sample and probably represent above average results.

Alternate:

- 4.16 – 4.76% reduction in commute VMT

The Herzog study [3] compared a group of employees, who were eligible for comprehensive commuter benefits (with financial incentives, services such as guaranteed ride home and carpool matching, and informational campaigns) and general marketing information, to a reference group of employees not eligible for commuter benefits. The study showed a 4.79% reduction in VMT, assuming 75% of the carpools were traveling to the same worksite. There was a 4.16% reduction in VMT, assuming only 50% of carpools were traveling to the same worksite.

Alternate:

- 8.5% reduction in vehicle commute trips

Employer survey results [4] showed that employees at the surveyed companies made 8.5% fewer vehicle trips to work than had been found in the baseline surveys conducted by large employers under the area's trip reduction regulation (i.e. comparing voluntary program with a mandatory regulation). This implied that the 8.5% reduction is a conservative estimate as it is compared to another trip reduction strategy, rather than comparing to a baseline with no reduction strategies implemented. Another survey also showed that 68% of commuters drove alone to work when their employer did not encourage trip reduction. It revealed that with employer encouragement, the drive-alone rate fell 5 percentage points to 63%.

This strategy assumes a companion strategy of employer encouragement. The literature did not specify what commute options each employer provided as part of the program. Options provided may have ranged from simply providing public transit

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Commute Trip Reduction

information to implementing a full TDM program with parking cash out, flex hours, emergency ride home, etc. This San Francisco Bay Area survey worked to determine the extent and impact of the emissions saved through voluntary trip reduction efforts (www.cleanairpartnership.com). It identified 454 employment sites with voluntary trip reduction programs and conducted a selected random survey of the more than 400,000 employees at those sites. The study concluded that employer encouragement makes a significant difference in employees' commute choices.

Alternative Literature References:

- [2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.
- [3] Herzog, Erik, Stacey Bricka, Lucie Audette, and Jeffra Rockwell. 2006. "Do Employee Commuter Benefits Reduce Vehicle Emissions and Fuel Consumption? Results of Fall 2004 Survey of Best Workplaces for Commuters." *Transportation Research Record 1956*, 34-41. (Table 8)
- [4] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 25-28)
<http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf>

Other Literature Reviewed:

None

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TRT-2

Commute Trip Reduction

3.4.2 Implement Commute Trip Reduction Program – Required Implementation/Monitoring

Commute Trip Reduction Program – Required, is a multi-strategy program that encompasses a combination of individual measures described in sections 3.4.3 through 3.4.9. It is presented as a means of preventing double-counting of reductions for individual measures that are included in this strategy. It does so by setting a maximum level of reduction that should be permitted for a combined set of strategies within a program that is contractually required of the development sponsors and managers and accompanied by a regular performance monitoring and reporting program.

Range of Effectiveness: 4.2 – 21.0% commute vehicle miles traveled (VMT) reduction and therefore 4.2 – 21.0% reduction in commute trip GHG emissions.

Measure Description:

The jurisdiction will implement a Commute Trip Reduction (CTR) ordinance. The intent of the ordinance will be to reduce drive-alone travel mode share and encourage alternative modes of travel. The critical components of this strategy are:

- Established performance standards (e.g. trip reduction requirements)
- Required implementation
- Regular monitoring and reporting

Regular monitoring and reporting will be required to assess the project's status in meeting the ordinance goals. The project should use existing ordinances, such as those in the cities of Tucson, Arizona and South San Francisco, California, as examples of successful CTR ordinance implementations. The City of Tucson requires employers with 100+ employees to participate in the program. An Alternative Mode Usage (AMU) goal and VMT reduction goal is established and each year the goal is increased. Employers persuade employees to commute via an alternative mode of transportation at least one day a week (including carpooling, vanpooling, transit, walking, bicycling, telecommuting, compressed work week, or alternatively fueled vehicle). The Transportation Demand Management (TDM) Ordinance in South San Francisco requires all non-residential developments that produce 100 average daily vehicle trips or more to meet a 35% non-drive-alone peak hour requirement with fees assessed for non-compliance. Employers have established significant CTR programs as a result.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context, unless large employers exist, and suite of strategies implemented are relevant in rural settings
- Jurisdiction level only
- Strategies in this case study calculations included:

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TRT-2

Commute Trip Reduction

- | | |
|---|---|
| <ul style="list-style-type: none"> ○ ○ ○ shuttles to transit station ○ ○ servicing the Bay Area ○ | <ul style="list-style-type: none"> Parking cash out Employer sponsored Employer sponsored bus Transit subsidies |
|---|---|

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % shift in vehicle mode share of commute trips (from [1])

B = % employees eligible

C = Adjustment from vehicle mode share to commute VMT

Detail:

- A: 21% reduction in vehicle mode share (from [1])
- C: 1.0 (see Appendix C for detail)

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TRT-2

Commute Trip Reduction

Assumptions:

Data based upon the following references:

[1] Nelson/Nygaard (2008). *South San Francisco Mode Share and Parking Report for Genentech, Inc.*(p. 8)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵⁷
CO ₂ e	4.2 – 21.0% of running
PM	4.2 – 21.0% of running
CO	4.2 – 21.0% of running
NOx	4.2 – 21.0% of running
SO ₂	4.2 – 21.0% of running
ROG	2.5 – 12.6% of total

Discussion:

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (20% eligibility) = 21% * 20% = 4.2%
- High Range % VMT Reduction (100% eligibility) = 21% * 100% = 21%

Preferred Literature:

- 21% reduction in vehicle mode share

Genentech, in South San Francisco [1], achieved a 34% non-single-occupancy vehicle (non-SOV) mode share (66% SOV) in 2008. Since 2006 when SOV mode share was 74% (26% non-SOV), there has been a reduction of over 10% in drive alone share. Carpool share was 12% in 2008, compared to 11.57% in 2006. Genentech has a significant TDM program including parking cash out (\$4/day), express GenenBus service around the Bay Area, free shuttles to Bay Area Rapid Transit (BART) and Caltrain, and transit subsidies. The Genentech campus surveyed for this study is a large, single-tenant campus. Taking an average transit mode share in a suburban development of 1.3% (NHTS,

⁵⁷ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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TRT-2

Commute Trip Reduction

http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_Stw_Travel_Survey_WkdayRpt.pdf (SCAG, SANDAG, Fresno County)), this is an estimated decrease from 98.7% to 78% vehicle mode share (66% SOV + 12% carpool), a 21% reduction in vehicle mode share.

Alternative Literature:

Alternate:

- 10.7% average annual increase in use of non-SOV commute modes

For the City of Tucson [2], use of alternative commute modes increased 64.3% between 1989 and 1995. Employers integrated several key activities into their TDM plans: disseminating information, developing company policies to support TDM, investing in facility enhancements, conducting promotional campaigns, and offering subsidies or incentives to encourage AMU.

Alternative Literature References:

[2] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 17-19)
<http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf>

Other Literature Reviewed:

None

Transportation

MP# MO-3.1 **TRT-3** **Commute Trip Reduction**

3.4.3 Provide Ride-Sharing Programs

Range of Effectiveness: 1 – 15% commute vehicle miles traveled (VMT) reduction and therefore 1 - 15% reduction in commute trip GHG emissions.

Measure Description:

Increasing the vehicle occupancy by ride sharing will result in fewer cars driving the same trip, and thus a decrease in VMT. The project will include a ride-sharing program as well as a permanent transportation management association membership and funding requirement. Funding may be provided by Community Facilities, District, or County Service Area, or other non-revocable funding mechanism. The project will promote ride-sharing programs through a multi-faceted approach such as:

- Designating a certain percentage of parking spaces for ride sharing vehicles
- Designating adequate passenger loading and unloading and waiting areas for ride-sharing vehicles
- Providing a web site or message board for coordinating rides

Measure Applicability:

- Urban and suburban context
- Negligible impact in many rural contexts, but can be effective when a large employer in a rural area draws from a workforce in an urban or suburban area, such as when a major employer moves from an urban location to a rural location.
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

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Commute Trip Reduction

- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Commute} * \text{Employee}$$

Where

Commute = % reduction in commute VMT (from [1])

Employee = % employees eligible

Detail:

- Commute: 5% (low density suburb), 10% (suburban center), 15% (urban) annual reduction in commute VMT (from [1])

Assumptions:

Data based upon the following references:

[1] VTPI. *TDM Encyclopedia*. <http://www.vtpi.org/tdm/tdm34.htm>; Accessed 3/5/2010.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵⁸
CO ₂ e	1 – 15% of running
PM	1 – 15% of running
CO	1 – 15% of running
NOx	1 – 15% of running
SO ₂	1 – 15% of running
ROG	0.6 – 9% of total

Discussion:

This strategy is often part of Commute Trip Reduction (CTR) Program, another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

Example:

Sample calculations are provided below:

⁵⁸ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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MP# MO-3.1

TRT-3

Commute Trip Reduction

- Low Range % VMT Reduction (low density suburb and 20% eligible) = $5\% * 20\% = 1\%$
- High Range % VMT Reduction (urban and 100% eligible) = $15\% * 1 = 15\%$

Preferred Literature:

- 5 – 15% reduction of commute VMT

The *Transportation Demand Management (TDM) Encyclopedia* notes that because rideshare passengers tend to have relatively long commutes, mileage reductions can be relatively large with rideshare. If ridesharing reduces 5% of commute trips it may reduce 10% of vehicle miles because the trips that are reduced are twice as long as average. Rideshare programs can reduce up to 8.3% of commute VMT, up to 3.6% of total regional VMT, and up to 1.8% of regional vehicle trips (Apogee, 1994; TDM Resource Center, 1996). Another study notes that ridesharing programs typically attract 5-15% of commute trips if they offer only information and encouragement, and 10-30% if they also offer financial incentives such as parking cash out or vanpool subsidies (York and Fabricatore, 2001).

Alternative Literature:

- Up to 1% reduction in VMT (if combined with two other strategies)

Per the Nelson\Nygaard report [2], ride-sharing would fall under the category of a minor TDM program strategy. The report allows a 1% reduction in VMT for projects with at least three minor strategies.

Alternative Literature References:

[2] Nelson\Nygaard, 2005. *Crediting Low-Traffic Developments* (p.12).
<http://www.montgomeryplanning.org/transportation/documents/TripGenerationAnalysisUsingURBEMIS.pdf>

Criterion Planner/Engineers and Fehr & Peers Associates (2001). Index 4D Method. *A Quick-Response Method of Estimating Travel Impacts from Land-Use Changes*. Technical Memorandum prepared for US EPA, October 2001.

Other Literature Reviewed:

None

Transportation

MP# MO-3.1 **TRT-4** **Commute Trip Reduction**

3.4.4 Implement Subsidized or Discounted Transit Program

Range of Effectiveness: 0.3 – 20.0% commute vehicle miles traveled (VMT) reduction and therefore a 0.3 – 20.0% reduction in commute trip GHG emissions.

Measure Description:

This project will provide subsidized/discounted daily or monthly public transit passes. The project may also provide free transfers between all shuttles and transit to participants. These passes can be partially or wholly subsidized by the employer, school, or development. Many entities use revenue from parking to offset the cost of such a project.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of project employees eligible
- Transit subsidy amount
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B * C$$

Where

A = % reduction in commute vehicle trips (VT) (from [1])

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MP# MO-3.1 **TRT-4** **Commute Trip Reduction**

B = % employees eligible
 C = Adjustment from commute VT to commute VMT

Detail:

- A:

	Daily Transit Subsidy			
	\$0.75	\$1.49	\$2.98	\$5.96
Worksite Setting	% Reduction in Commute VT			
Low density suburb	1.5%	3.3%	7.9%	20.0%*
Suburban center	3.4%	7.3%	16.4%	20.0%*
Urban location	6.2%	12.9%	20.0%*	20.0%*
* Discounts greater than 20% will be capped, as they exceed levels recommended by TCRP 95 Draft Chapter 19 and other literature.				
- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Nelson\Nygaard, 2010. *City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis* (p.401).

[2] Nelson\Nygaard used the following literature sources: VTPI, Todd Litman, *Transportation Elasticities*, <http://www.vtpi.org/elasticities.pdf>. Comsis Corporation (1993), *Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience*, USDOT and Institute of Transportation Engineers (www.ite.org); www.bts.gov/ntl/DOCS/474.html.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁵⁹
CO ₂ e	0.3 - 20% of running
PM	0.3 - 20% of running
CO	0.3 - 20% of running
NOx	0.3 - 20% of running
SO ₂	0.3 - 20% of running
ROG	0.18 - 12% of total

⁵⁹ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

MP# MO-3.1 **TRT-4** **Commute Trip Reduction**

Discussion:

This strategy is often part of a Commute Trip Reduction (CTR), another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

The literature evaluates this strategy in relation to the employer, but keep in mind that this strategy can also be implemented by a school or the development as a whole.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (\$0.75, low density suburb, 20% eligible) = 1.5% * 20% = 0.3%
- High Range % VMT Reduction (\$5.96, urban, 100% eligible) = 20% * 100% = 20%

Preferred Literature:

Commute Vehicle Trip Reduction	Daily Transit Subsidy			
	\$0.75	\$1.49	\$2.98	\$5.96
Worksite Setting				
Low density suburb, rideshare oriented	0.1%	0.2%	0.6%	1.9%
Low density suburb, mode neutral	1.5%	3.3%	7.9%	21.7%*
Low density suburb, transit oriented	2.0%	4.2%	9.9%	23.2%*
Activity center, rideshare oriented	1.1%	2.4%	5.8%	16.5%
Activity center, mode neutral	3.4%	7.3%	16.4%	38.7%*
Activity center, transit oriented	5.2%	10.9%	23.5%*	49.7%*
Regional CBD/Corridor, rideshare oriented	2.2%	4.7%	10.9%	28.3%*
Regional CBD/Corridor, mode neutral	6.2%	12.9%	26.9%*	54.3%*
Regional CBD/Corridor, transit oriented	9.1%	18.1%	35.5%*	64.0%*

* Discounts greater than 20% will be capped, as they exceed levels recommended by *TCRP 95 Draft Chapter 19* and other literature.

Nelson\Nygaard (2010) updated a commute trip reduction table from VTPI Transportation Elasticities to account for inflation since the data was compiled. Data regarding commute vehicle trip reductions was originally from a study conducted by Comsis Corporation and the Institute of Transportation Engineers (ITE).

Alternative Literature:

Alternate:

- 2.4-30.4% commute vehicle trip reduction (VTR)

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MP# MO-3.1

TRT-4

Commute Trip Reduction

TCRP 95 Draft Chapter 19 [2] indicates transit subsidies in areas with good transit and restricted parking have a commute VTR of 30.4%; good transit but free parking, a commute VTR of 7.6%; free parking and limited transit 2.4%. Programs with transit subsidies have an average commute VTR of 20.6% compared with an average commute VTR of 13.1% for sites with non-transit fare subsidies.

Alternate:

- 0.03-0.12% annual greenhouse gas (GHG) reduction

Moving Cooler [3] assumed price elasticities of -0.15, -0.2, and -0.3 for lower fares 25%, 33%, and 50%, respectively. *Moving Cooler* assumes average vehicle occupancy of 1.43 and a VMT/trip of 5.12.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

[3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (Table D.3)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

Transportation

CEQA# MM T-2

MP# MO-3.2

TRT-5

Commute Trip Reduction

3.4.5 Provide End of Trip Facilities

Range of Effectiveness: Grouped strategy (see TRT-1 through TRT-3)

Measure Description:

Non-residential projects will provide "end-of-trip" facilities for bicycle riders including showers, secure bicycle lockers, and changing spaces. End-of-trip facilities encourage the use of bicycling as a viable form of travel to destinations, especially to work. End-of-trip facilities provide the added convenience and security needed to encourage bicycle commuting.

End-of-trip facilities have minimal impacts when implemented alone. This strategy's effectiveness in reducing vehicle miles traveled (VMT) depends heavily on the suite of other transit, pedestrian/bicycle, and demand management measures offered. End-of-trip facilities should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 through TRT-2).

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

- 22% increase in bicycle mode share

The bicycle study documents a multivariate analysis of UK National Travel Survey (Wardman et al. 2007) which found significant impacts on bicycling to work. Compared to base bicycle mode share of 5.8% for work trips, outdoor parking would raise the share to 6.3%, indoor secure parking to 6.6%, and indoor parking plus showers to 7.1%. This results in an estimate 22% increase in bicycle mode share $((7.1\% - 5.8\%) / 5.8\% = 22\%)$. This suggests that such end of trip facilities have an important impact on the decision to bicycle to work. However, these effects represent reductions in VMT no greater than 0.02% (see Appendix C for calculation detail).

Alternate:

- 2 - 5% reduction in commute vehicle trips

The *Transportation Demand Management (TDM) Encyclopedia*, citing Ewing (1993), documents Sacramento's TDM ordinance. The City allows developers to claim trip reduction credits for worksite showers and lockers of 5% in central business districts, 2% within 660 feet of a transit station, and 2% elsewhere.

Transportation

CEQA# MM T-2

MP# MO-3.2

TRT-5

Commute Trip Reduction

Alternate:

- 0.625% reduction in VMT

The *Center for Clean Air Policy (CCAP) Guidebook* attributes a 1% to 5% reduction associated with the use of bicycles, which reflects the assumption that their use is typically for shorter trips. Based on the *CCAP Guidebook*, a 2.5% reduction is allocated for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

Alternative Literature References:

- [1] Pucher J., Dill, J., and Handy, S. *Infrastructure, Programs and Policies to Increase Bicycling: An International Review*. February 2010. (Table 2, pg. S111)
http://policy.rutgers.edu/faculty/pucher/Pucher_Dill_Handy10.pdf
- [2] Victoria Transportation Policy Institute (VTPI). *TDM Encyclopedia*,
<http://www.vtpi.org/tdm/tdm9.htm>; accessed 3/4/2010; last update 1/25/2010).
 VTPI citing: Reid Ewing (1993), "TDM, Growth Management, and the Other Four Out of Five Trips," *Transportation Quarterly*, Vol. 47, No. 3, Summer 1993, pp. 343-366.
- [3] Center for Clean Air Policy (CCAP), *CCAP Transportation Emission Guidebook*.
http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD

Other Literature Reviewed:

None

Transportation

MP# TR-3.5 **TRT-6** **Commute Trip Reduction**

3.4.6 Encourage Telecommuting and Alternative Work Schedules

Range of Effectiveness: 0.07 – 5.50% commute vehicle miles traveled (VMT) reduction and therefore 0.07 – 5.50% reduction in commute trip GHG emissions.

Measure Description:

Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees participating (1 – 25%)
- Strategy implemented: 9-day/80-hour work week, 4-day/40-hour work week, or 1.5 days of telecommuting

Mitigation Method:

$$\% \text{ Commute VMT Reduction} = \text{Commute}$$

Where

Commute = % reduction in commute VMT (See table below)

Transportation

MP# TR-3.5

TRT-6

Commute Trip Reduction

	Employee Participation				
	1%	3%	5%	10%	25%
	% Reduction in Commute VMT				
9-day/80-hour work week	0.07%	0.21%	0.35%	0.70%	1.75%
4-day/40-hour work week	0.15%	0.45%	0.75%	1.50%	3.75%
telecommuting 1.5 days	0.22%	0.66%	1.10%	2.20%	5.5%
Source: Moving Cooler Technical Appendices, Fehr & Peers					
Notes: The percentages from Moving Cooler incorporate a discount of 25% for rebound effects. The percentages beyond 1% employee participation are linearly extrapolated.					

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (p. B-54)

http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶⁰
CO ₂ e	0.07 – 5.50% of running
PM	0.07 – 5.50% of running
CO	0.07 – 5.50% of running
NO _x	0.07 – 5.50% of running
SO ₂	0.07 – 5.50% of running
ROG	0.04 – 3.3% of total

Discussion:

This strategy is often part of a Commute Trip Reduction Program, another strategy documented separately (see TRT-1 and TRT-2). The Project Applicant should take care not to double count the impacts.

The employee participation rate should be capped at a maximum of 25%. *Moving Cooler* [1] notes that roughly 50% of a typical workforce could participate in alternative

⁶⁰ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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TRT-6

Commute Trip Reduction

work schedules (based on job requirements) and roughly 50% of those would choose to participate.

The 25% discount for rebound effects is maintained to provide a conservative estimate and support the literature results. The project may consider removing this discount from their calculations if deemed appropriate.

Example:

N/A – no calculations are needed.

Preferred Literature:

- 0.07% - 0.22% reduction in commuting VMT

Moving Cooler [1] estimates that if 1% of employees were to participate in a 9 day/80 hour compressed work week, commuting VMT would be reduced by 0.07%. If 1% of employees were to participate in a 4 day/40 hour compressed work week, commuting VMT would reduce by 0.15%; and 1% of employees participating in telecommuting 1.5 days per week would reduce commuting VMT by 0.22%. These percentages incorporate a discounting of 25% to account for rebound effects (i.e., travel for other purposes during the day while not at the work site). The percentages beyond 1% employee participation are linearly extrapolated (see table above).

Alternative Literature:

Alternate:

- 9-10% reduction in VMT for participating employees

As documented in *TCRP 95 Draft Chapter 19* [2], a Denver federal employer's implementation of compressed work week resulted in a 14-15% reduction in VMT for participating employees. This is equivalent to the 0.15% reduction for each 1% participation cited in the preferred literature above. In the Denver example, there was a 65% participation rate out of a total of 9,000 employees. *TCRP 95* states that the compressed work week experiment has no adverse effect on ride-sharing or transit use. Flexible hours have been shown to work best in the presence of medium or low transit availability.

Alternate:

- 0.5 vehicle trips reduced per employee per week
- 13 – 20 VMT reduced per employee per week



Transportation

MP# TR-3.5

TRT-6

Commute Trip Reduction

As documented in *TCRP 95 Draft Chapter 19* [2], a study of compressed work week for 2,600 Southern California employees resulted in an average reduction of 0.5 trips per week (per participating employee). Participating employees also reduced their VMT by 13-20 miles per week. This translates to a reduction of between 5% and 10% in commute VMT, and so is lower than the 15% reduction cited for Denver government employees.

Alternative Literature References:

[2] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies.

Other Literature Reviewed:

None

Transportation

TRT-7

Commute Trip Reduction

3.4.7 Implement Commute Trip Reduction Marketing

Range of Effectiveness: 0.8 – 4.0% commute vehicle miles traveled (VMT) reduction and therefore 0.8 – 4.0% reduction in commute trip GHG emissions.

Measure Description:

The project will implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions. Marketing strategies may include:

- New employee orientation of trip reduction and alternative mode options
- Event promotions
- Publications

CTR marketing is often part of a CTR program, voluntary or mandatory. CTR marketing is discussed separately here to emphasize the importance of not only providing employees with the options and monetary incentives to use alternative forms of transportation, but to clearly and deliberately promote and educate employees of the various options. This will greatly improve the impact of the implemented trip reduction strategies.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

VMT = vehicle miles traveled
 EF_{running} = emission factor for running emissions

Transportation

TRT-7

Commute Trip Reduction

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of project employees eligible (i.e. percentage of employers choosing to participate)

Mitigation Method:

$$\% \text{ Commute VMT Reduction} = A * B * C$$

Where

A = % reduction in commute vehicle trips (from [1])

B = % employees eligible

C = Adjustment from commute VT to commute VMT

Detail:

- A: 4% (per [1])
- C: 1.0 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Pratt, Dick. Personal communication regarding the *Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies*. Transit Cooperative Research Program.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶¹
CO ₂ e	0.8 – 4.0% of running
PM	0.8 – 4.0% of running
CO	0.8 – 4.0% of running
NOx	0.8 – 4.0% of running
SO ₂	0.8 – 4.0% of running
ROG	0.5 – 2.4% of total

⁶¹ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

TRT-7

Commute Trip Reduction

Discussion:

The effectiveness of commute trip reduction marketing in reducing VMT depends on which commute reduction strategies are being promoted. The effectiveness levels provided below should only be applied if other programs are offered concurrently, and represent the total effectiveness of the full suite of measures.

This strategy is often part of a CTR Program, another strategy documented separately (see strategy T# E1). Take care not to double count the impacts.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (20% eligible) = $4\% * 20\% = 0.8\%$
- High Range % VMT Reduction (100% eligible) = $4\% * 100\% = 4.0\%$

Preferred Literature:

- 4-5% commute vehicle trips reduced with full-scale employer support

TCRP 95 Draft Chapter 19 notes the average empirically-based estimate of reductions in vehicle trips for full-scale, site-specific employer support programs alone is 4-5%. This effectiveness assumes there are alternative commute modes available which have on-going employer support. For a program to receive credit for such outreach and marketing efforts, it should contain guarantees that the program will be maintained permanently, with promotional events delivered regularly and with routine performance monitoring.

Alternative Literature:

- 5-15% reduction in commute vehicle trips
- 3% increase in effectiveness of marketed transportation demand management (TDM) strategies

VTPI [2] notes that providing information on alternative travel modes by employers was one of the most important factors contributing to mode shifting. One study (Shadoff, 1993) estimates that marketing increases the effectiveness of other TDM strategies by up to 3%. Given adequate resources, marketing programs may reduce vehicle trips by 5-15%. The 5 – 15% range comes from a variety of case studies across the world. U.S. specific case studies include: 9% reduction in vehicle trips with TravelSmart in Portland (12% reduction in VMT), 4-8% reduction in vehicle trips from four cities with individualized marketing pilot projects from the Federal Transit Administration (FTA). Averaged across the four pilot projects, there was a 6.75% reduction in VMT.



Transportation

TRT-7

Commute Trip Reduction

Alternative Literature References:

[2] VTPI, TDM Encyclopedia – TDM Marketing; <http://www.vtpi.org/tdm/tdm23.htm>;
accessed 3/5/2010. Table 7 (citing FTA, 2006)

Other Literature Reviewed:

None

Transportation

MP# TR-3.1

TRT-8

Commute Trip Reduction

3.4.8 Implement Preferential Parking Permit Program

Range of Effectiveness: Grouped strategy (see TRT-1 through TRT-3)

Measure Description:

The project will provide preferential parking in convenient locations (such as near public transportation or building front doors) in terms of free or reduced parking fees, priority parking, or reserved parking for commuters who carpool, vanpool, ride-share or use alternatively fueled vehicles. The project will provide wide parking spaces to accommodate vanpool vehicles.

The impact of preferential parking permit programs has not been quantified by the literature and is likely to have negligible impacts when implemented alone. This strategy should be grouped with Commute Trip Reduction (CTR) Programs (TRT-1 and TRT-2) as a complementary strategy for encouraging non-single occupant vehicle travel.

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No quantitative results are available. The case study in the literature implemented a preferential parking permit program as a companion strategy to a comprehensive TDM program. Employees who carpooled at least three times a week qualified to use the spaces.

Alternative Literature References:

- [1] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997.
<http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf>

Other Literature Reviewed:

None

Transportation

TRT-9

Commute Trip Reduction

3.4.9 Implement Car-Sharing Program

Range of Effectiveness: 0.4 – 0.7% vehicle miles traveled (VMT) reduction and therefore 0.4 – 0.7% reduction in GHG emissions.

Measure Description:

This project will implement a car-sharing project to allow people to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees. The car-sharing program could be created through a local partnership or through one of many existing car-share companies. Car-sharing programs may be grouped into three general categories: residential- or citywide-based, employer-based, and transit station-based. Transit station-based programs focus on providing the “last-mile” solution and link transit with commuters’ final destinations. Residential-based programs work to substitute entire household based trips. Employer-based programs provide a means for business/day trips for alternative mode commuters and provide a guaranteed ride home option.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Urban or suburban context

Transportation

TRT-9

Commute Trip Reduction

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B / C$$

Where

A = % reduction in car-share member annual VMT (from the literature)

B = number of car share members per shared car (from the literature)

C = deployment level based on urban or suburban context

Detail:

- A: 37% (per [1])
- B: 20 (per [2])
- C:

Project setting	1 shared car per X population
Urban	1,000
Suburban	2,000
Source: <i>Moving Cooler</i>	

Assumptions:

Data based upon the following references:

- [1] Millard-Ball, Adam. "Car-Sharing: Where and How it Succeeds," (2005) Transit Cooperative Research Program (108). P. 4-22
- [2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (p. B-52, Table D.3)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶²
CO ₂ e	0.4 – 0.7% of running
PM	0.4 – 0.7% of running
CO	0.4 – 0.7% of running
NOx	0.4 – 0.7% of running
SO ₂	0.4 – 0.7% of running
ROG	0.24 – 0.42% of total

- ⁶² The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

TRT-9

Commute Trip Reduction

Discussion:

Variable C in the mitigation method section represents suggested levels of deployment based on the literature. Levels of deployment may vary based on the characteristics of the project site and the needs of the project residents and employees. This variable should be adjusted accordingly.

The methodology for calculation of VMT reduction utilizes *Moving Cooler's* rule of thumb⁶³ for the estimated number of car share members per vehicle. An estimate of 50% reduction in car-share member annual VMT (from *Moving Cooler*) was high compared to other literature sources, and *TCRP 108's* 37% reduction was used in the calculations instead.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (suburban) = $37\% * 20 / 2000 = 0.4\%$
- High Range % VMT Reduction (urban) = $37\% * 20 / 1000 = 0.7\%$

Preferred Literature:

- 37% reduction in car-share member VMT

The *TCRP 108* [1] report conducted a survey of car-share members in the United States and Canada in 2004. The results of the survey showed that respondents, on average, drove only 63% of the average mileage they previously drove when not car-share members.

Alternative Literature:

Alternate – Residential or Citywide Based:

- 0.05-0.27% reduction in GHG
- 0.33% reduction in VMT in urban areas

Moving Cooler [2] assumed an aggressive deployment of one car per 2,000 inhabitants of medium-density census tracts and of one car per 1,000 inhabitants of high-density census tracts. This strategy assumes providing a subsidy to a public, private, or nonprofit car-sharing organization and providing free or subsidized lease for usage of public street parking. *Moving Cooler* assumed 20 members per shared car and 50% reduction in VMT per equivalent car. The percent reduction calculated assumes a percentage of urban areas are low, medium, and high density, thus resulting in a lower

⁶³ See discussion in Alternative Literature section for "rule of thumb" detail.

Transportation

TRT-9

Commute Trip Reduction

than expected reduction in VMT assuming an aggressive deployment in medium and high density areas.

Alternate – Transit Station and Employer Based:

- 23-44% reduction in drive-alone mode share
- Average daily VMT reduction of 18 – 23 miles

TCRP 95 Draft Chapter 19 [3] looked at two demonstrations, CarLink I and CarLink II, in the San Francisco Bay Area. CarLink I ran from January to November 1999. It involved 54 individuals and 12 rental cars stationed at the Dublin-Pleasanton BART station. CarLink II ran from July 2001 to June 2002 and involved 107 individuals and 19 rental cars. CarLink II was based in Palo Alto in conjunction with Caltrain commuter rail service and several employers in the Stanford Research Park. Both CarLink demonstrations were primarily targeted for commuters. CarLink I had a 23% increase in rail mode share, a reduction in drive-alone mode share of 44%, and a decrease in Average Daily VMT of 18 miles. CarLink II had a VMT for round-trip commuters decrease of 23 miles per day and a mode share for drive alone decrease of 22.9%.

Alternate:

- 50% reduction in driving for car-share members

A UC Berkeley study of San Francisco's City CarShare [4] found that members drive nearly 50% less after joining. The study also found that when people joined the car-sharing organization, nearly 30% reduced their household vehicle ownership and two-thirds avoided purchasing another car. The UC Berkeley study found that almost 75% of vehicle trips made by car-sharing members were for social trips such as running errands and visiting friends. Only 25% of trips were for commuting to work or for recreation. Most trips were also made outside of peak periods. Therefore, car-sharing may generate limited impact on peak period traffic.

Alternative Literature References:

- [3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (p. B-52, Table D.3)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf
- [4] Pratt, Dick. *Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies*. Transit Cooperative Research Program.

Transportation

TRT-9

Commute Trip Reduction

Cervero, Robert and Yu-Hsin Tsai. *San Francisco City CarShare: Travel-Demand Trends and Second-Year Impacts*, 2005. (Figure 7, p. 35, Table 7, Table 12)
<http://escholarship.org/uc/item/4f39b7b4>

Other Literature Reviewed:

None

Transportation

TRT-10

Commute Trip Reduction

3.4.10 Implement a School Pool Program

Range of Effectiveness: 7.2 – 15.8% school vehicle miles traveled (VMT) Reduction and therefore 7.2 – 15.8% reduction in school trip GHG emissions.

Measure Description:

This project will create a ridesharing program for school children. Most school districts provide bussing services to public schools only. SchoolPool helps match parents to transport students to private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Degree of implementation of SchoolPool Program(moderate to aggressive)

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Families} * B$$

Where

Families = % families that participate (from [1] and [2])

B = adjustments to convert from participation to daily VMT to annual school VMT

Transportation

TRT-10

Commute Trip Reduction

Detail:

- Families: 16% (moderate implementation), 35% (aggressive implementation), (from [1] and [2])
- B: 45% (see Appendix C for detail)

Assumptions:

Data based upon the following references:

- [1] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p. 10, 36-38)
<http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf>
- [2] Denver Regional Council of Governments (DRCOG). *Survey of Schoolpool Participants, April 2008*. <http://www.drcog.org/index.cfm?page=SchoolPool>. Obtained from Schoolpool Coordinator, Mia Bemelen.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶⁴
CO ₂ e	7.2 – 15.8% of running
PM	7.2 – 15.8% of running
CO	7.2 – 15.8% of running
NOx	7.2 – 15.8% of running
SO ₂	7.2 – 15.8% of running
ROG	4.3 – 9.5% of total

Discussion:

This strategy reflects the findings from only one case study.

Example:

Sample calculations are provided below:

- Low Range % School VMT Reduction (moderate implementation) = 16% * 45% = 7.2%
- High Range % School VMT Reduction (aggressive implementation) = 35% * 45% = 15.8%

⁶⁴ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

TRT-10

Commute Trip Reduction

Preferred Literature:

- 7,711 – 18,659 daily VMT reduction

As presented in the TDM Case Studies [1] compilation, the SchoolPool program in Denver saved 18,659 VMT per day in 1995, compared with 7,711 daily in 1994 – a 142% increase. The Denver Regional Council of Governments (DRCOG) [2] enrolled approximately 7,000 families and 32 private schools in the program. The DRCOG staff surveyed a school or interested families to collect home location and schedules of the students. The survey also identified prospective drivers. DRCOG then used carpool-matching software and GIS to match families. These match lists were sent to the parents for them to form their own school pools. 16% of families in the database formed carpools. The average carpool carried 3.1 students.

The SchoolPool program is still in effect and surveys are conducted every few years to monitor the effectiveness of the program. The latest survey report received was in 2008. The report showed that the participant database had increased to over 10,000 families, an 18% increase from 2005. 29% of participants used the list to form a school carpool. This percentage was lower than 35% in 2005 but higher than prior to 2005, at 24%. The average number of families in each carpool ranged from 2.1 prior to 2005 to 2.8 in 2008. The average number of carpool days per week was roughly 4.7. The number of school weeks per year was 39. Per discussions with the Schoolpool Coordinator, a main factor of success was establishing a large database. This was achieved by having parents opt-out of the database versus opting-in.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

MP# MO-3.1

TRT-11

Commute Trip Reduction

3.4.11 Provide Employer-Sponsored Vanpool/Shuttle

Range of Effectiveness: 0.3 – 13.4% commute vehicle miles traveled (VMT) reduction and therefore 0.3 – 13.4% reduction in commute trip GHG emissions.

Measure Description:

This project will implement an employer-sponsored vanpool or shuttle. A vanpool will usually service employees' commute to work while a shuttle will service nearby transit stations and surrounding commercial centers. Employer-sponsored vanpool programs entail an employer purchasing or leasing vans for employee use, and often subsidizing the cost of at least program administration, if not more. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's purview, and rider charges are normally set on the basis of vehicle and operating cost.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for office, industrial, and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

- VMT = vehicle miles traveled
- EF_{running} = emission factor for running emissions

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B * C$$

Where

- A = % shift in vanpool mode share of commute trips (from [1])
- B = % employees eligible
- C = adjustments from vanpool mode share to commute VMT

Transportation

MP# MO-3.1

TRT-11

Commute Trip Reduction

Detail:

- A: 2-20% annual reduction in vehicle mode share (*from [1]*)
 - Low range: low degree of implementation, smaller employers
 - High range: high degree of implementation, larger employers
- C: 0.67 (See Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] TCRP Report 95. *Chapter 5: Vanpools and Buspools - Traveler Response to Transportation System Changes.*

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c5.pdf. (p.5-8)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶⁵
CO ₂ e	0.3 – 13.4% of running
PM	0.3 – 13.4% of running
CO	0.3 – 13.4% of running
NO _x	0.3 – 13.4% of running
SO ₂	0.3 – 13.4% of running
ROG	0.18 – 8.0% of total

Discussion:

Vanpools are generally more successful with the largest of employers, as large employee counts create the best opportunities for employees to find a suitable number of travel companions to form a vanpool. In the San Francisco Bay Area several large companies (such as Google, Apple, and Genentech) provide regional bus transportation for their employees. No specific studies of these large buspools were identified in the literature. However, the GenenBus serves as a key element of the overall commute trip reduction (CTR) program for Genentech, as discussed in the CTR Program – Required strategy.

This strategy is often part of a CTR Program, another strategy documented separately (see strategy T# E1). Take care not to double count the impacts.

Example:

Sample calculations are provided below:

⁶⁵ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

MP# MO-3.1

TRT-11

Commute Trip Reduction

- Low Range % VMT Reduction (low implementation/small employer, 20% eligible) = $2\% * 20\% * 0.67 = 0.3\%$
- High Range % VMT Reduction (high implementation/large employer, 100% eligible) = $20\% * 100\% * 0.67 = 13.4\%$

Preferred Literature:

- 2-20% vanpool mode share

TCRP Report 95 [1] notes that vanpools can capture 2 to 20% mode share. This range can be attributed to differences in programs, access to high-occupancy vehicle (HOV) lanes, and geographic range. The *TCRP Report* highlights a case study of the 3M Corporation, which with the implementation of a vanpooling program saw drive alone mode share decrease by 10 percentage points and vanpooling mode share increase to 7.8 percent. The *TCRP Report* notes most vanpools programs do best where one-way trip lengths exceed 20 miles, where work schedules are fixed and regular, where employer size is sufficient to allow matching of 5 to 12 people from the same residential area, where public transit is inadequate, and where some congestion or parking problems exist.

Alternative Literature:

In *TDM Case Studies* [2], a case study of Kaiser Permanente Hospital has shown their employer-sponsored shuttle service eliminated 380,100 miles per month, or nearly 4 million miles of travel per year, and four tons of smog precursors annually.

Alternative Literature References:

[2] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997.

<http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf>

Other Literature Reviewed:

None

Transportation

TRT-12

Commute Trip Reduction

3.4.12 Implement Bike-Sharing Programs

Range of Effectiveness: Grouped strategy (see SDT-5 and LUT-9)

Measure Description:

This project will establish a bike sharing program. Stations should be at regular intervals throughout the project site. The number of bike-share kiosks throughout the project area should vary depending on the density of the project and surrounding area. Paris' bike-share program places a station every few blocks throughout the city (approximately 28 bike stations/square mile). Bike-station density should increase around commercial and transit hubs.

Bike sharing programs have minimal impacts when implemented alone. This strategy's effectiveness is heavily dependent on the location and context. Bike-sharing programs have worked well in densely populated areas (examples in Barcelona, London, Lyon, and Paris) with existing infrastructure for bicycling. Bike sharing programs should be combined with **Bike Lane Street Design (SDT-5)** and **Improve Design of Development (LUT-9)**.

Taking evidence from the literature, a 135-300% increase in bicycling (of which roughly 7% are shifting from vehicle travel) results in a negligible impact (around 0.03% vehicle miles traveled (VMT) reduction (see Appendix C for calculations)).

Measure Applicability:

- Urban and suburban-center context only
- Negligible in a rural context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

Alternative Literature:

Alternate:

The International Review [1] found bike mode share increases:

- from 0.75% in 2005 to 1.76% in 2007 in Barcelona (Romero, 2008) (135% increase)
- From 1% in 2001 to 2.5% in 2007 in Paris (Nadal, 2007; City of Paris, 2007) (150% increase)
- From 0.5% in 1995 to 2% in 2006 in Lyon (Bonnette, 2007; Velo'V, 2009) (300% increase)

London [2] is the only study that reports the breakdown of the prior mode In London: 6% of users reported shifting from driving, 34% from transit, 23% said they would not have

Transportation

TRT-12

Commute Trip Reduction

travelled (Noland and Ishaque, 2006). Additionally, 68% of the bike trips were for leisure or recreation. Companion strategies included concurrent improvements in bicycle facilities.

The London program was implemented west of Central London in a densely populated area, mainly residential, with several employment centers. A relatively well developed bike network existed, including over 1,000 bike racks. The program implemented 25 locker stations with 70 bikes total.

Alternate:

- 1/3 vehicle trip reduced per day per bicycle (1,000 vehicle trips reduced per day in Lyon)

The Bike Share Opportunities [3] report looks at two case studies of bike-sharing implementation in France. In Lyon, the 3,000 bike-share system shifts 1,000 car trips to bicycle each day. Surveys indicate that 7% of the bike share trips would have otherwise been made by car. Lyon saw a 44% increase in bicycle riding within the first year of their program while Paris saw a 70% increase in bicycle riding and a 5% reduction in car use and congestion within the first year and a half of their program. The Bike Share Opportunities report found that population density is an important part of a successful program. Paris' bike share subscription rates range between 6% and 9% of the total population. This equates to an average of 75,000 rentals per day. The effectiveness of bike share programs at sub-city scales are not addressed in the literature.

Alternative Literature References:

- [1] Pucher J., Dill, J., and Handy, S. Infrastructure, Programs and Policies to Increase Bicycling: An International Review. February 2010. (Table 4)
- [2] Noland, R.B., Ishaque, M.M., 2006. "Smart Bicycles in an urban area: Evaluation of a pilot scheme in London." *Journal of Public Transportation*. 9(5), 71-95.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.117.8173&rep=rep1&type=pdf#page=76>
- [3] NYC Department of City Planning, *Bike-Share Opportunities in New York City*, 2009. (p. 11, 14, 24, 68)
http://www.nyc.gov/html/dcp/html/transportation/td_bike_share.shtml

Other Literature Reviewed:

None

Transportation

MP# TR-3.4

TRT-13

Commute Trip Reduction

3.4.13 Implement School Bus Program

Measure Effectiveness Range: 38 – 63% School VMT Reduction and therefore 38 – 63% reduction in school trip GHG emissions⁶⁶

Measure Description:

The project will work with the school district to restore or expand school bus services in the project area and local community.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential and mixed-use projects

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of families expected to use/using school bus program

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % families expected to use/using school bus program

B = adjustments to convert from participation to school day VMT to annual school VMT

⁶⁶ Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Transportation

MP# TR-3.4

TRT-13

Commute Trip Reduction

Detail:

- A: a typical range of 50 – 84% (see discussion section)
- B: 75% (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] JD Franz Research, Inc.; *Lamorinda School Bus Program, 2003 Parent Survey, Final Report*; January 2004; obtained from Juliet Hansen, Program Manager. (p. 5)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶⁷
CO ₂ e	38 – 63% of running
PM	38 – 63% of running
CO	38 – 63% of running
NO _x	38 – 63% of running
SO ₂	38 – 63% of running
ROG	23 – 38% of total

Discussion:

The literature presents a high range of effectiveness showing 84% participation by families. 50% is an estimated low range assuming the project has a minimum utilization goal. Note that the literature presents results from a single case study.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (50% participation) = 50% * 75% = 38%
- High Range % VMT Reduction (85% participation) = 84% * 75% = 63%

Preferred Literature:

- 84% penetration rate
- 2,451 – 2,677 daily vehicle trips reduced
- 441,180 – 481,860 annual vehicle trips reduced

⁶⁷ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.



Transportation

MP# TR-3.4

TRT-13

Commute Trip Reduction

The Lamorinda School Bus Program was implemented to reduce traffic congestion in the communities of Lafayette, Orinda, and Moraga, California. In 2003, a parent survey was conducted to determine the extent to which the program diverted or eliminated vehicle trips. This survey covered a representative sample of all parents (not just those signed up for the school bus program). The range of morning trips prevented is 1,266 to 1,382; the range of afternoon trips prevented is 1,185 to 1,295. Annualized, the estimated total trip prevention is between 441,180 to 481,860. 83% of parents surveyed reported that their child usually rides the bus to school in the morning. 84% usually rode the bus back home in the afternoons. The data came from surveys and the results are unique to the location and extent of the program. The report did not indicate the number of school buses in operation during the time of the survey.

Alternative Literature:

None

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

TRT-14 Commute Trip Reduction

3.4.14 Price Workplace Parking

Range of Effectiveness: 0.1 – 19.7% commute vehicle miles traveled (VMT) reduction and therefore 0.1 -19.7% reduction in commute trip GHG emissions.

Measure Description:

The project will implement workplace parking pricing at its employment centers. This may include: explicitly charging for parking for its employees, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives.

Though similar to the Employee Parking “Cash-Out” strategy, this strategy focuses on implementing market rate and above market rate pricing to provide a price signal for employees to consider alternative modes for their work commute.

Measure Applicability:

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- Reductions applied only if complementary strategies are in place:
 - Residential parking permits and market rate public on-street parking - to prevent spill-over parking
 - Unbundled parking - is not required but provides a market signal to employers to transfer over the, now explicit, cost of parking to the employees. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing workplace parking prices.

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled VMT = vehicle miles
 for running emissions EF_{running} = emission factor

Transportation

TRT-14

Commute Trip Reduction

Inputs:

The following information needs to be provided by the Project Applicant:

- Location of project site: low density suburb, suburban center, or urban location
- Daily parking charge (\$1 - \$6)
- Percentage of employees subject to priced parking

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = Percentage reduction in commute VMT (from [1] and [2])

B = Percent of employees subject to priced parking

Detail:

Project Location	A: Daily Parking Charge			
	\$1	\$2	\$3	\$6
Low density suburb	0.5%	1.2%	1.9%	2.8%
Suburban center	1.8%	3.7%	5.4%	6.8%
Urban Location	6.9%	12.5%	16.8%	19.7%
Moving Cooler, VTPI, Fehr & Peers. Note: 2009 dollars.				

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13, Table D.3)

http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[2] VTPI, Todd Litman, *Transportation Elasticities*, (Table 15)

<http://www.vtpi.org/elasticities.pdf>.

Cosis Corporation (1993), *Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience*, USDOT and Institute of Transportation Engineers (www.ite.org); www.bts.gov/ntl/DOCS/474.html.

Transportation

TRT-14

Commute Trip Reduction

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶⁸
CO ₂ e	0.1 – 19.7% of running
PM	0.1 – 19.7% of running
CO	0.1 – 19.7% of running
NOx	0.1 – 19.7% of running
SO ₂	0.1 – 19.7% of running
ROG	0.06 – 11.8% of total

Discussion:

Priced parking can result in parking spillover concerns. The highest VMT reductions should be given only with complementary strategies such as parking time limits or neighborhood parking permits are in place in surrounding areas.

Example:

Sample calculations are provided below:

- Low Range % Commute VMT Reduction (low density suburb, \$1/day, 20% priced) = $0.5\% \times 20\% = 0.1\%$
- High Range % Commute VMT Reduction (urban, \$6/day, 100% priced) = $19.7\% \times 100\% = 19.7\%$

Preferred Literature:

The table above (variable A) was calculated using the percent commute VMT reduction from *Moving Cooler* (0.5% - 6.9% reduction for \$1/day parking charge). The percentage reductions for \$2 - \$6 / day parking charges were extrapolated by multiplying the *Moving Cooler* percentages with the ratios from the VTPI table below (percentage increases). For example, to obtain a percent VMT reduction for a \$6/day parking charge for a low density suburb, $0.5\% \times ((36.1\% - 6.5\%) / 6.5\%) = 2.3\%$. The methodology was utilized to capture the non-linear effect of parking charges on trip reduction (VTPI) while maintaining a conservative estimate of percent reductions (*Moving Cooler*).

Preferred:

- 0.5-6.9% reduction in commuting VMT
- 0.44-2.07% reduction in greenhouse gas (GHG) emissions

⁶⁸ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

TRT-14

Commute Trip Reduction

Moving Cooler Technical Appendices indicate that increasing employee parking costs \$1 per day (\$0.50 per vehicle for carpool and free for vanpools) can reduce GHG between 0.44% and 2.07% and reduce commuting VMT between 0.5% and 6.9%. The reduction in GHG varies based on how extensive the implementation of the program is. The reduction in commuting VMT differs for type of urban area as shown in the table below. Please note that these numbers are independent of results for employee parking cash-out strategy (discussed in its own fact sheet).

Strategy	Description	Percent Change in Commuting VMT					
		Large Metropolitan (higher transit use)	Large Metropolitan (lower transit use)	Medium Metro (higher)	Medium Metro (lower)	Small Metro (higher)	Small Metro (lower)
Parking Charges	Parking charge of \$1/day	6.9%	0.9%	1.8%	0.5%	1.3%	0.5%
Source: <i>Moving Cooler</i>							

Preferred:

Commute Vehicle trip reduction	Daily Parking Charges			
Worksite Setting	\$0.75	\$1.49	\$2.98	\$5.96
Suburb	6.5%	15.1%	25.3%*	36.1%*
Suburban Center	12.3%	25.1%*	37.0%*	46.8%*
Central Business District	17.5%	31.8%*	42.6%*	50.0%*
Source: VTPI [2]				

* Discounts greater than 20% should be capped, as they exceed levels recommended by *TCRP 95* and other literature.

The reduction in commute trips varies by parking fee and worksite setting [2]. For daily parking fees between \$1.49 and \$5.96, worksites set in low-density suburbs could decrease vehicle trips by 6.5-36.1%, worksites set in activity centers could decrease vehicle trips by 12.3-46.8%, and worksites set in regional central business districts could decrease vehicles by 17.5-50%. (Note that adjusted parking fees (from 1993 dollars to 2009 dollars) were used. Adjustments were taken from the *Santa Monica General Plan EIR Report, Appendix*, Nelson\Nygaard).

Alternative Literature:

Alternate:

- 1 percentage point reduction in auto mode share
- 12.3% reduction in commute vehicle trips

TCRP 95 Draft Chapter 19 [4] found that an increase of \$8 per month in employee parking charges was necessary to decrease employee SOV mode split rates by one

Transportation

TRT-14

Commute Trip Reduction

percentage point. *TCRP 95* compared 82 sites with TDM programs and found that programs with parking fees have an average commute vehicle trip reduction of 24.6%, compared with 12.3% for sites with free parking.

Alternate:

- 1% reduction in VMT (\$1 per day charge)
- 2.6% reduction in VMT (\$3 per day charge)

The Deakin, et al. report [5] for the California Air Resources Board (CARB) analyzed transportation pricing measures for the Los Angeles, Bay Area, San Diego, and Sacramento metropolitan areas.

Alternative Literature References:

[4] Pratt, Dick. Personal Communication Regarding the Draft of TCRP 95 Traveler Response to Transportation System Changes – Chapter 19 Employer and Institutional TDM Strategies. (Table 19-9)

[5] Deakin, E., Harvey, G., Pozdena, R., and Yarema, G., 1996. *Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy and Equity Impacts*. Final Report. Prepared for California Air Resources Board (CARB), Sacramento, CA (Table 7.2)

Other Literature Reviewed:

None

Transportation

CEQA# MM T-9
MP# TR-5.3

TRT-15

Commute Trip Reduction

3.4.15 Implement Employee Parking “Cash-Out”

Range of Effectiveness: 0.6 – 7.7% commute vehicle miles traveled (VMT) reduction and therefore 0.6 – 7.7% reduction in commute trip GHG emissions

Measure Description:

The project will require employers to offer employee parking “cash-out.” The term “cash-out” is used to describe the employer providing employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer.

Measure Applicability:

- Urban and suburban context
- Not applicable in a rural context
- Appropriate for retail, office, industrial, and mixed-use projects
- Reductions applied only if complementary strategies are in place:
 - Residential parking permits and market rate public on-street parking -to prevent spill-over parking
 - Unbundled parking - is not required but provides a market signal to employers to forgo paying for parking spaces and “cash-out” the employee instead. In addition, unbundling parking provides a price with which employers can utilize as a means of establishing “cash-out” prices.

Baseline Method:

See introduction section.

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage of employees eligible
- Location of project site: low density suburb, suburban center, or urban location

Mitigation Method:

$$\% \text{ VMT Reduction} = A * B$$

Where

A = % reduction in commute VMT (from the literature)

B = % of employees eligible

Transportation

CEQA# MM T-9
MP# TR-5.3

TRT-15

Commute Trip Reduction

Detail:

- A: Change in Commute VMT: 3.0% (low density suburb), 4.5% (suburban center), 7.7% (urban) change in commute VMT (source: Moving Cooler)

Assumptions:

Data based upon the following references:

- Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (Table 5.13, Table D.3)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁶⁹
CO ₂ e	0.6 – 7.7% of running
PM	0.6 – 7.7% of running
CO	0.6 – 7.7% of running
NO _x	0.6 – 7.7% of running
SO ₂	0.6 – 7.7% of running
ROG	0.36 – 4.62% of running

Discussion:

Please note that these estimates are independent of results for workplace parking pricing strategy (see strategy number T# E5 for more information).

If work site parking is not unbundled, employers cannot utilize this unbundled price as a means of establishing “cash-out” prices. The table below shows typical costs for parking facilities in large urban and suburban areas in the US. This can be utilized as a reference point for establishing reasonable “cash-out” prices. Note that the table does not include external costs to parking such as added congestion, lost opportunity cost of land devoted to parking, and greenhouse gas (GHG) emissions.

	Structured (urban)	Surface (suburban)
Land (Annualized)	\$1,089	\$215
Construction (Annualized)	\$2,171	\$326

⁶⁹ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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TRT-15

Commute Trip Reduction

O & M Costs	\$575	\$345
Annual Total	\$3,835	\$885
Monthly Costs	\$320	\$74
Source: VTPI, <i>Transportation Costs and Benefit Analysis II – Parking Costs</i> , April 2010 (p.5.4-10)		

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (low density suburb and 20% eligible) = $3\% * 0.2 = 0.6\%$
- High Range % VMT Reduction (urban and 100% eligible) = $7.7\% * 1 = 7.7\%$

Preferred Literature:

- 0.44% - 2.07% reduction in GHG emissions
- 3.0% - 7.7% reduction in commute VMT

Moving Cooler Technical Appendices indicate that reimbursing “cash-out” participants \$1/day can reduce GHG between 0.44% and 2.07% and reduce commuting VMT between 3.0% and 7.7%. The reduction in GHG varies based on how extensive the implementation of the program is. The reduction in commuting VMT differs for type of urban area is shown in the table below.

Strategy	Description	Percent Change in Commuting VMT					
		Large Metropolitan (higher transit use)	Large Metropolitan (lower transit use)	Medium Metro (higher)	Medium Metro (lower)	Small Metro (higher)	Small Metro (lower)
Parking Cash-Out	Subsidy of \$1/day	7.7%	3.7%	4.5%	3.0%	4.0%	3.0%

Alternative Literature:

Alternate:

- 2-6% reduction in vehicle trips

VTPI used synthesis data to determine parking cash out could reduce commute vehicle trips by 10-30%. VTPI estimates that the portion of vehicle travel affected by parking cash-out would be about 20% and therefore there would be only about a 2-6% total reduction in vehicle trips attributed to parking cash-out.

Alternate:

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TRT-15

Commute Trip Reduction

MP# TR-5.3

- 12% reduction in VMT per year per employee
- 64% increase in carpooling
- 50% increase in transit mode share
- 39% increase in pedestrian/bike share

Shoup looked at eight California firms that complied with California's 1992 parking cash-out law, applicable to employers of 50 or more persons in regions that do not meet the state's clean air standards. To comply, a firm must offer commuters the option to choose a cash payment equal to any parking subsidy offered. Six of companies went beyond compliance and subsidized one or more alternatives to parking (more than the parking subsidy price). The eight companies ranged in size between 120 and 300 employees, and were located in downtown Los Angeles, Century City, Santa Monica, and West Hollywood. Shoup states that an average of 12% fewer VMT per year per employee is equivalent to removing one of every eight cars driven to work off the road.

Alternative Literature Notes:

Litman, T., 2009. "Win-Win Emission Reduction Strategies." Victoria Transport Policy Institute. Website: <http://www.vtpi.org/wwclimate.pdf>. Accessed March 2010. (p. 5)

Donald Shoup, "Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies." *Transport Policy*, Vol. 4, No. 4, October 1997, pp. 201-216. (Table 1, p. 204)

Other Literature Reviewed:

None

Transportation

CEQA# MS-G3

TST-1

Transit System
Improvements

3.5 Transit System Improvements

3.5.1 Provide a Bus Rapid Transit System

Range of Effectiveness: 0.02 – 3.2% vehicle miles traveled (VMT) reduction and therefore 0.02 – 3% reduction in GHG emissions.

Measure Description:

The project will provide a Bus Rapid Transit (BRT) system with design features for high quality and cost-effective transit service. These include:

- Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other Transit Priority measures. Some systems use guideways which automatically steer the bus on portions of the route.
- Frequent, high-capacity service
- High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride.
- Pre-paid fare collection to minimize boarding delays.
- Integrated fare systems, allowing free or discounted transfers between routes and modes.
- Convenient user information and marketing programs.
- High quality bus stations with Transit Oriented Development in nearby areas.
- Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.

BRT systems vary significantly in the level of travel efficiency offered above and beyond “identity” features and BRT branding. The following effectiveness ranges represent general guidelines. Each proposed BRT should be evaluated specifically based on its characteristics in terms of time savings, cost, efficiency, and way-finding advantages. These types of features encourage people to use public transit and therefore reduce VMT.

Measure Applicability:

- Urban and suburban context
- Negligible in a rural context. Other measures are more appropriate to rural areas, such as express bus service to urban activity centers with park-and-ride lots at system-efficient rural access points.
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:



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$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Existing transit mode share
- Percentage of lines serving Project converting to BRT

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project specificity if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Riders} * \text{Mode} * \text{Lines} * D$$

Where

Riders = % increase in transit ridership on BRT line (28% from [1])

Mode = Existing transit

mode share (see table below)

Lines = Percentage of lines

serving project converting to BRT

D = Adjustments from transit ridership increase to VMT (0.67, see Appendix C)

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.) Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.	

Transportation

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TST-1

Transit System
Improvements

- D: 0.67 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

- [1] FTA, August 2005. "Las Vegas Metropolitan Area Express BRT Demonstration Project", NTD, <http://www.ntdprogram.gov/ntdprogram/cs?action=showRegionAgencies®ion=9>

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁷⁰
CO ₂ e	0.02 – 3.2% of running
PM	0.02 – 3.2% of running
CO	0.02 – 3.2% of running
NOx	0.02 – 3.2% of running
SO ₂	0.02 – 3.2% of running
ROG	0.012 – 1.9% of total

Discussion:

Increases in transit ridership due to shifts from other lines do not need to be addressed since it is already incorporated in the literature.

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCPRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (suburban, 10% of lines) = $28\% * 1.3\% * 10\% * 0.67 = 0.02\%$

⁷⁰ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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Transit System
Improvements

- High Range % VMT Reduction (urban, 100% of lines) = $28\% * 17\% * 100\% * 0.67 = 3.2\%$

Preferred Literature:

- 28% increase in transit ridership in the existing corridor

The FTA study [1] looks at the implementation of the Las Vegas BRT system. The BRT supplemented an existing route along a 7.5 mile corridor. The existing route was scaled back. Total ridership on the corridor (both routes combined) increased 61,704 monthly riders, 28% increase on the existing corridor and 1.4% increase in system ridership. The route represented an increase in 2.1% of system service miles provided.

Alternative Literature:

Alternate:

- 27-84% increase in total transit ridership

Various bus rapid transit systems obtained the following total transit ridership growth: Vancouver 96B (30%), Las Vegas Max (35-40%), Boston Silver Line (84%), Los Angeles (27-42%), and Oakland (66%). VTPI [3] obtained the BRT data from BC Transit's unpublished research. The effectiveness of a BRT strategy depends largely on the land uses the BRT serves and their design and density.

Alternate:

- 50% increase in weekly transit ridership
- 60 – 80% shorter travel time compared to vehicle trip

The Martin Luther King, Jr. East Busway in Pennsylvania opened in 1983 as a separate roadway exclusively for public buses. The busway was 6.8 miles long with six stations. Ridership has grown from 20,000 to 30,000 weekday riders over 10 years. The busway saves commuters significant time compared with driving: 12 minutes versus 30-45 minutes in the AM or an hour in the PM [4].

Alternative Literature References:

[2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section above]

[3] TDM Encyclopedia; Victoria Transport Policy Institute (2010). Bus Rapid Transit; (<http://www.vtpi.org/tdm/tdm120.htm>); updated 1/25/2010; accessed 3/3/2010.



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- [4] Transportation Demand Management Institute of the Association for Commuter Transportation. *TDM Case Studies and Commuter Testimonials*. Prepared for the US EPA. 1997. (p.55-56)
<http://www.epa.gov/OMS/stateresources/rellinks/docs/tdmcases.pdf>

Transportation

MP# LU-3.4.3

TST-2

**Transit System
Improvements**

3.5.2 Implement Transit Access Improvements

Range of Effectiveness: Grouped strategy. [See TST-3 and TST-4]

Measure Description:

This project will improve access to transit facilities through sidewalk/ crosswalk safety enhancements and bus shelter improvements. The benefits of Transit Access Improvements alone have not been quantified and should be grouped with Transit Network Expansion (TST-3) and Transit Service Frequency and Speed (TST-4).

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of improving transit facilities as a standalone strategy.

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

CEQA# MS-G3

TST-3

**Transit System
Improvements**

3.5.3 Expand Transit Network

Range of Effectiveness: 0.1 – 8.2% vehicle miles travelled (VMT) reduction and therefore 0.1 – 8.2% reduction in GHG emissions⁷¹

Measure Description:

The project will expand the local transit network by adding or modifying existing transit service to enhance the service near the project site. This will encourage the use of transit and therefore reduce VMT.

Measure Applicability:

- Urban and suburban context
- May be applicable in a rural context but no literature documentation available (effectiveness will be case specific and should be based on specific assessment of levels of services and origins/destinations served)
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage increase transit network coverage
- Existing transit mode share
- Project location: urban center, urban, or suburban

⁷¹ Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Transportation

CEQA# MS-G3

TST-3

Transit System Improvements

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project specificity if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Coverage} * B * \text{Mode} * D$$

Where

Coverage = % increase in transit network coverage

B = elasticity of transit ridership with respect to service coverage (see Table below)

Mode = existing transit mode share

D = adjustments from transit ridership increase to VMT (0.67, from Appendix C)

B:

Project setting	Elasticity
Suburban	1.01
Urban	0.72
Urban Center	0.65
Source: TCRP 95, Chapter 10	

Mode: Provide existing transit mode share for project or utilize the following averages

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.) Urban Center from San Francisco County Transportation Authority Countywide Transportation Plan, 2000.	

Assumptions:

Data based upon the following references:

Transportation

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TST-3

**Transit System
Improvements**

[1] Transit Cooperative Research Program. TCRP Report 95 Traveler Response to System Changes – Chapter 10: Bus Routing and Coverage. 2004. (p. 10-8 to 10-10)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁷²
CO ₂ e	0.1 – 8.2% of running
PM	0.1 – 8.2% of running
CO	0.1 – 8.2% of running
NOx	0.1 – 8.2% of running
SO ₂	0.1 – 8.2% of running
ROG	0.06 – 4.9% of total

Discussion:

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (10% expansion, suburban) = $10\% * 1.01 * 1.3\% * .67 = 0.1\%$
- High Range % VMT Reduction (100% expansion, urban) = $100\% * 0.72 * 17\% * .67 = 8.2\%$

The low and high ranges are estimates and may vary based on the characteristics of the project.

⁷² The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

Transportation

CEQA# MS-G3

TST-3

Transit System
Improvements

Preferred Literature:

- 0.65 = elasticity of transit ridership with respect to service coverage/expansion (in radial routes to central business districts)
- 0.72 = elasticity of transit ridership with respect to service coverage/expansion (in central city routes)
- 1.01 = elasticity of transit ridership with respect to service coverage/expansion (in suburban routes)

TCRP 95 Chapter 10 [1] documents the results of system-wide service expansions in San Diego. The least sensitivity to service expansion came from central business districts while the largest impacts came from suburban routes. Suburban locations, with traditionally low transit service, tend to have greater ridership increases compared to urban locations which already have established transit systems. In general, there is greater opportunity in suburban locations.

Alternative Literature:

- -0.06 = elasticity of VMT with respect to transit revenue miles

Growing Cooler [3] modeled the impact of various urban variables (including transit revenue miles and transit passenger miles) on VMT, using data from 84 urban areas around the U.S.

Alternative Literature References:

[2] Transit Cooperative Research Program. *TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It* (p.47-48). 1997. [cited in discussion section above]

[3] Ewing, et al, 2008. *Growing Cooler – The Evidence on Urban Development and Climate Change*. Urban Land Institute.

Transportation

CEQA# MS-G3

TST-4

Transit System Improvements

3.5.4 Increase Transit Service Frequency/Speed

Range of Effectiveness: 0.02 – 2.5% vehicle miles traveled (VMT) reduction and therefore 0.02 – 2.5% reduction in GHG emissions⁷³

Measure Description:

This project will reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.

Measure Applicability:

- Urban and suburban context
- May be applicable in a rural context but no literature documentation available (effectiveness will be case specific and should be based on specific assessment of levels of services and origins/destinations served)
- Appropriate for specific or general plans

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage reduction in headways (increase in frequency)
- Level of implementation
- Project setting: urban center, urban, suburban
- Existing transit mode share

⁷³ Transit vehicles may also result in increases in emissions that are associated with electricity production or fuel use. The Project Applicant should consider these potential additional emissions when estimating mitigation for these measures.

Transportation

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TST-4

Transit System Improvements

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project-specific values if desired. Please see Appendix C for calculation detail:

- Average vehicle occupancy

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Headway} * B * C * \text{Mode} * E$$

Where

Headway = % reduction in headways

B = elasticity of transit ridership with respect to increased frequency of service (from [1])

C = adjustment for level of implementation

Mode = existing transit mode share

E = adjustments from transit ridership increase to VMT

Detail:

- Headway: reasonable ranges from 15 – 80%
- B:

Setting	Elasticity
Urban	0.32
Suburban	0.36
Source: TCRP Report 95 Chapter 9	

- C:

Level of implementation = number of lines improved / total number of lines serving project	Adjustment
<50%	50%
>=50%	85%
Fehr & Peers, 2010.	

- Mode: Provide existing transit mode share for project or utilize the following averages

Project setting	Transit mode share
Suburban	1.3%
Urban	4%
Urban Center	17%
Source: NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf (Urban – MTC, SACOG. Suburban – SCAG, SANDAG, Fresno County.)	

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TST-4

**Transit System
Improvements**

Urban Center from San Francisco County Transportation Authority
Countywide Transportation Plan, 2000.

- E: 0.67 (see Appendix C for detail)

Assumptions:

Data based upon the following references:

[1] Transit Cooperative Research Program. TCRP Report 95 Traveler Response to System Changes – Chapter 9: Transit Scheduling and Frequency (p. 9-14)

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁷⁴
CO ₂ e	0.02 – 2.5% % of running
PM	0.02 – 2.5% % of running
CO	0.02 – 2.5% % of running
NO _x	0.02 – 2.5% % of running
SO ₂	0.02 – 2.5% % of running
ROG	0.01 – 1.5% % of total

Discussion:

Reasonable ranges for reductions were calculated assuming existing 30-minute headways reduced to 25 minutes and 5 minutes to establish the estimated low and high reductions, respectively.

The level of implementation adjustment is used to take into account increases in transit ridership due to shifts from other lines. If increases in frequency are only applied to a percentage of the lines serving the project, then we conservatively estimate that 50% of the transit ridership increase is a shift from the existing lines. If frequency increases are applied to a majority of the lines serving the project, we conservatively assume at least some of the transit ridership (15%) comes from existing riders.

In general, transit operational strategies alone are not enough for a large modal shift [2], as evidenced by the low range in VMT reductions. Through case study analysis, the TCRP report [2] observed that strategies that focused solely on improving level of service or quality of transit were unsuccessful at achieving a significant shift. Strategies that reduce the attractiveness of vehicle travel should be implemented in combination to attract a larger shift in transit ridership. The three following factors directly impact the

⁷⁴ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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TST-4

Transit System
Improvements

attractiveness of vehicle travel: urban expressway capacity, urban core density, and downtown parking availability.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (15% reduction in headways, suburban, <50% implementation) = $15\% * 0.36 * 50\% * 1.3\% * 0.67 = 0.02\%$
- High Range % VMT Reduction (80% reduction in headways, urban, >50% implementation) = $80\% * 0.32 * 85\% * 17\% * 0.67 = 2.5\%$

Preferred Literature:

- 0.32 = elasticity of transit ridership with respect to transit service (urban)
- 0.36 – 0.38 = elasticity of transit ridership with respect to transit service (suburban)

TCRP 95 Chapter 9 [1] documents the results of frequency changes in Dallas. Increases in frequency are more sensitive in a suburban environment. Suburban locations, with traditionally low transit service, tend to have greater ridership increases compared to urban locations which already have established transit systems. In general, there is greater opportunity in suburban locations

Alternative Literature:

- 0.5 = elasticity of transit ridership with respect to increased frequency of service
- 1.5 to 2.3% increase in annual transit trips due to increased frequency of service
- 0.4-0.5 = elasticity of ridership with respect to increased operational speed
- 4% - 15% increase in annual transit trips due to increased operational speed
- 0.03-0.09% annual GHG reduction (for bus service expansion, increased frequency, and increased operational speed)

For increased frequency of service strategy, *Moving Cooler* [3] looked at three levels of service increases, 3%, 3.5% and 4.67% increases in service, resulting in a 1.5 – 2.3% increase in annual transit trips. For increased speed and reliability, *Moving Cooler* looked at three levels of speed/reliability increases. Improving travel speed by 10% assumed implementing signal prioritization, limited stop service, etc. over 5 years. Improving travel speed by 15% assumed all above strategies plus signal synchronization and intersection reconfiguration over 5 years. Improving travel speed by 30% assumed all above strategies and an improved reliability by 40%, integrated fare system, and implementation of BRT where appropriate. *Moving Cooler* calculates estimated 0.04-0.14% annual GHG reductions in combination with bus service expansion strategy.

Transportation

CEQA# MS-G3

TST-4

Transit System
Improvements

Alternative Literature References:

- [2] Transit Cooperative Research Program. TCRP 27 – Building Transit Ridership: An Exploration of Transit's Market Share and the Public Policies That Influence It (p.47-48). 1997. [cited in discussion section]
- [3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (p B-32, B-33, Table D.3)
http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

Transportation

MP# TR-4.1.4

TST-5

**Transit System
Improvements**

3.5.5 Provide Bike Parking Near Transit

Range of Effectiveness: Grouped strategy. [See TST-3 and TST-4]

Measure Description:

Provide short-term and long-term bicycle parking near rail stations, transit stops, and freeway access points. The benefits of Station Bike Parking have no quantified impacts as a standalone strategy and should be grouped with Transit Network Expansion (TST-3) and Increase Transit Service Frequency and Speed (TST-4) to encourage multi-modal use in the area and provide ease of access to nearby transit for bicyclists.

Measure Applicability:

- Urban, suburban context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified that specifically looks at the quantitative impact of including transit station bike parking.

Alternative Literature References:

None

Other Literature Reviewed:

None

Transportation

TST-6

Transit System Improvements

3.5.6 Provide Local Shuttles

Range of Effectiveness: Grouped strategy. [See TST-4 and TST-5]

Measure Description:

The project will provide local shuttle service through coordination with the local transit operator or private contractor. The local shuttles will provide service to transit hubs, commercial centers, and residential areas. The benefits of Local Shuttles alone have not been quantified and should be grouped with Transit Network Expansion (TST-4) and Transit Service Frequency and Speed (TST-5) to solve the “first mile/last mile” problem. In addition, many of the CommuteTrip Reduction Programs (Section 2.4, TRP 1-13) also included local shuttles.

Measure Applicability:

- Urban, suburban context
- Appropriate for large residential, retail, office, mixed use, and industrial projects

Alternative Literature:

No literature was identified to support the effectiveness of this strategy alone.

Alternative Literature References:

None

Other Literature Reviewed:

None

3.6 Road Pricing/Management

3.6.1 Implement Area or Cordon Pricing

Range of Effectiveness: 7.9 – 22.0% vehicle miles traveled (VMT) reduction and therefore 7.9 – 22.0% reduction in GHG emissions.

Measure Description:

This project will implement a cordon pricing scheme. The pricing scheme will set a cordon (boundary) around a specified area to charge a toll to enter the area by vehicle. The cordon location is usually the boundary of a central business district (CBD) or urban center, but could also apply to substantial development projects with limited points of access, such as the proposed Treasure Island development in San Francisco. The cordon toll may be static/constant, applied only during peak periods, or be variable, with higher prices during congested peak periods. The toll price can be based on a fixed schedule or be dynamic, responding to real-time congestion levels. It is critical to have an existing, high quality transit infrastructure for the implementation of this strategy to reach a significant level of effectiveness. The pricing signals will only cause mode shifts if alternative modes of travel are available and reliable.

Measure Applicability:

- Central business district or urban center only

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled

for running emissions

VMT = vehicle miles

EF_{running} = emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Percentage increase in pricing for passenger vehicles to cross cordon
- Peak period variable price or static all-day pricing (London scheme)

Transportation

MP# TR-3.6

RPT-1

Road Pricing Management

The following are optional inputs. Average (default) values are included in the calculations but can be updated to project-specific values if desired. Please see Appendix C for calculation detail:

- % (due to pricing) route shift, time-of-day shift, HOV shift, trip reduction, shift to transit/walk/bike

Mitigation Method:

$$\% \text{ VMT Reduction} = \text{Cordon\$} * B * C$$

Where

Cordon\$ = % increase in pricing for passenger vehicles to cross cordon

B = Elasticity of VMT with respect to price (from [1])

C = Adjustment for % of VMT impacted by congestion pricing and mode shifts

Detail:

- Cordon\$: reasonable range of 100 – 500% (See Appendix C for detail)
- B: 0.45 [1]
- C:

Cordon pricing scheme	Adjustment
Peak-period variable pricing	8.8%
Static all-day pricing	21%
Source: See Appendix C for detail	

Assumptions:

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. (p. B-13, B-14)

http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

- Referencing: VTPI, *Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior*. July 2008. www.vtpi.org

Transportation

MP# TR-3.6

RPT-1

Road Pricing Management

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁷⁵
CO ₂ e	7.9 - 22.0% of running
PM	7.9 - 22.0% of running
CO	7.9 - 22.0% of running
NO _x	7.9 - 22.0% of running
SO ₂	7.9 - 22.0% of running
ROG	4.7 – 13.2% of total

Discussion:

The amount of pricing will vary on a case-by-case basis. The 100 – 500% increase is an estimated range of increases and should be adjusted to reflect the specificities of the pricing scheme implemented. Take care in calculating the percentage increase in price if baseline is \$0.00. An upper limit of 500% may be a good check point. If baseline is zero, the Project Applicant may want to conduct calculations with a low baseline such as \$1.00.

These calculations assume that the project is within the area cordon, essentially assuming that 100% of project trips will be affected. See Appendix C to make appropriate adjustments.

Example:

Sample calculations are provided below:

- Low Range % VMT Reduction (100% increase in price, peak period pricing) = $100\% * 0.45 * 8.8\% = 4.0\%$
- High Range % VMT Reduction (500% increase in price, all-day pricing) = $500\% * 0.45 * 21\% = 47.3\% = 22\%$ (established maximum based on literature)

Preferred Literature:

- -0.45 VMT elasticity with regard to pricing
- 0.04-0.08% greenhouse gas (GHG) reduction

Moving Cooler [1] assumes an average of 3% of regional VMT would cross the CBD cordon. A VMT reduction of 20% was estimated to require an average of 65 cents/mile applied to all congested VMT in the CBD, major employment, and retail centers. The

⁷⁵ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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RPT-1

Road Pricing Management

range in GHG reductions is attributed to the range of implementation and start date. *Moving Cooler* reports an elasticity range from -0.15 to -0.47 from VTPI. *Moving Cooler* utilizes a stronger elasticity (0.45) to represent greater impact cordon pricing will have on users compared to other pricing strategies.

Alternative Literature:

- 6.5-14.0% reduction in carbon emissions
- 16-22% reduction in vehicles
- 6-9% increase in transit use

The Center for Clean Air Policy (CCAP) [2] cites two case studies in Europe, one in London and one in Stockholm, which show vehicle reductions of 16% and 22%, respectively. London's fee reduced CO₂ by 6.5%. Stockholm's program reduced injuries by 10%, increased transit use by 6-9%, and reduced carbon emissions by 14% in the central city within months of implementation.

Alternative Literature References:

[2] Center for Clean Air Policy (CCAP), *Short-term Efficiency Measures*. (p. 1)

<http://www.ccap.org/docs/resources/715/Short-Term%20Travel%20Efficiency%20Measures%20cut%20GHGs%209%2009%20final.pdf>

CCAP cites Transport for London. *Central London Congestion Charging: Impacts Monitoring, Sixth Annual Report*. July 2008 <http://www.tfl.gov.uk/assets/downloads/sixth-annual-impacts-monitoring-report-2008-07.pdf> (p. 6) and Leslie Abboud and Jenny Clevstrom, "Stockholm's Syndrome," August 29, 2006, *Wall Street Journal*. http://transportation.northwestern.edu/mahmassani/Media/WSJ_8.06.pdf (p. 2)

Other Literature Reviewed:

None

Transportation

MP# TR-2.1 & TR-2.2

RPT-2

Road Pricing Management

3.6.2 Improve Traffic Flow

Range of Effectiveness: 0 - 45% reduction in GHG emissions

Measure Description:

The project will implement improvements to smooth traffic flow, reduce idling, eliminate bottlenecks, and management speed. Strategies may include signalization improvements to reduce delay, incident management to increase response time to breakdowns and collisions, Intelligent Transportation Systems (ITS) to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds.

This measure does not take credit for any reduction in GHG emissions associated with changes to non-project traffic VMT. If Project Applicant wants to take credit for this benefit, the non-project traffic VMT would also need to be covered in the baseline conditions.

Measure Applicability:

- Urban, suburban, and rural context

Baseline Method:

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The CO₂ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{\text{running}}$$

Where:

traveled	VMT	= vehicle miles
for running emissions	EF _{running}	= emission factor

Inputs:

The following information needs to be provided by the Project Applicant:

- Average base-year travel speed (miles per hour (mph)) on implemented roads (congested⁷⁶ condition)

⁷⁶ A roadway is considered "congested" if operating at Level of Service (LOS) E or F

Transportation

MP# TR-2.1 & TR-2.2

RPT-2

Road Pricing Management

- Future travel speed (mph) on implemented roads for both a) congested and b) free-flow⁷⁷ condition
- Total vehicle miles traveled (VMT) on implemented roadways
- Total project-generated VMT

Mitigation Method:

$$\% \text{ CO}_2 \text{ Emissions Reduction} = 1 - \frac{\text{Project GHG Emission}_{\text{post strategy}}}{\text{Project GHG emission}_{\text{baseline}}}$$

Where

Project GHG emission_{post strategy} = EF_{running} after strategy implementation * project VMT

Project GHG emission_{baseline} = EF_{running} before strategy implementation * project VMT

EF_{running} = emission factor for running emissions [from table presented under "Detail" below]

Detail:

mph	Grams of CO ₂ / mile	
	congested	Free-flow
5	1,110	823
10	715	512
15	524	368
20	424	297
25	371	262
30	343	247
35	330	244
40	324	249
45	323	259
50	325	273
55	328	289
60	332	306
65	339	325
70	353	347
75	377	375
80	420	416
85	497	478

Source: Barth, 2008, Fehr & Peers [1]

⁷⁷ A roadway is considered "free flow" if operating at LOS D or better



Transportation

MP# TR-2.1 & TR-2.2

RPT-2

Road Pricing Management

By only including the project VMT portion, the reduction is typically on scale with the percentage of cost for traffic improvements and full reduction calculated for project VMT should be used. However, if the project cost is a greater share than their contribution to the VMT on the road, than the project and non-project VMT should be calculated and the percent reduction should be multiplied by the percent cost allocation. The GHG emission reductions associated with non-project VMT (if applicable) would be calculated as follows:

$$\text{Metric Tonnes GHG reduced due to improving non-Project traffic flow} = \% \text{ Cost Allocation} * \text{Non-Project VMT} * (\text{EF}_{\text{congested}} - \text{EF}_{\text{freeflow}}) / (1,000,000 \text{ gram/MT})$$

Where:

Non-Project VMT that the Project's cost share impacts

= portion of non-project VMT

EF_{congested} congested road in g/VMT

= emissions for

EF_{freeflow} freeflow road in g/VMT

= emissions for

Assumptions:

Data based upon the following references:

- [1] Barth and Boriboonsomsin, "Real World CO₂ Impacts of Traffic Congestion", *Transportation Research Record, Journal of the Transportation Research Board*, No. 2058, Transportation Research Board, National Academy of Science, 2008.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions ⁷⁸
CO ₂ e	0 - 45% of running
PM	0 - 45% of running
CO	0 - 45% of running

⁷⁸ The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

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MP# TR-2.1 & TR-2.2

RPT-2

Road Pricing Management

NOx	0 - 45% of running
SO ₂	0 - 45% of running
ROG	0 - 27% of total

Discussion:

Care must be taken when estimating effectiveness since significantly improving traffic flow essentially lowers the cost and delay involved in travel, which under certain circumstances may induce additional VMT. [See Appendix C for a discussion on induced travel.]

The range of effectiveness presented above is a very rough estimate as emissions reductions will be highly dependent on the level of implementation and degree of congestion on the existing roadways. In addition, the low range of effectiveness was stated at 0% to highlight the potential of induced travel negating benefits achieved from this strategy.

Example:

Sample calculations are provided below:

- Signal timing coordination implementation:
 - Existing congested speeds of 25 mph
 - Conditions post-implementation: would improve to 25 mph free flow speed
 - Proposed project daily traffic generation is 200,000 VMT
 - Project CO₂ Emissions_{baseline} = (371 g CO₂/mile) * (200,000 VMT daily) * (1 MT / 1 x 10⁶ g) = 74 MT of CO₂ daily
 - Project CO₂ Emissions_{post strategy} = (262 g CO₂/mile) * (200,000 VMT daily) * (1 MT / 1 x 10⁶ g) = 52.4 MT of CO₂ daily
 - Percent CO₂emissions reduction = 1 - (52.4 MT/ 74 MT) = 29%
- Speed management technique:
 - Existing free-flow speeds of 75 mph
 - Conditions post-implementation: reduce to 55 mph free flow speed
 - Proposed project daily traffic generation is 200,000 VMT
 - Project CO₂ Emissions_{baseline} = (375 g CO₂/mile) * (200,000 VMT daily) * (1 MT / 1 x 10⁶ g) = 75 MT of CO₂ daily
 - Project CO₂ Emissions_{post strategy} = (289 g CO₂/mile) * (200,000 VMT daily) * (1 MT / 1 x 10⁶ g) = 58 MT of CO₂ daily
 - Percent CO₂emissions reduction= 1 - (58 tons/ 75 tons) = 23%

Preferred Literature:

- 7 – 12% reduction in CO₂ emissions

Transportation

MP# TR-2.1 & TR-2.2

RPT-2

Road Pricing Management

This study [1] examined traffic conditions in Southern California using energy and emissions modeling and calculated the impacts of 1) congestion mitigation strategies to smooth traffic flow, 2) speed management techniques to reduce high free-flow speeds, and 3) suppression techniques to eliminate acceleration/deceleration associated with stop-and-go traffic. Using typical conditions on Southern California freeways, the strategies could reduce emissions by 7 to 12 percent.

The table (in the mitigation method section) was calculated using the CO₂ emissions equation from the report:

$$\ln(y) = b_0 + b_1 * x + b_2 * x^2 + b_3 * x^3 + b_4 * x^4$$

where

y = CO₂ emission in grams / mile

x = average trip speed in miles per hour (mph)

The coefficients for b_i were based off of Table 1 of the report, which then provides an equation for both congested conditions (real-world) and free-flow (steady-state) conditions.

Alternative Literature:

- 4 - 13% reduction in fuel consumption

The FHWA study [2] looks at various case studies of traffic flow improvements. In Los Angeles, a new traffic control signal system was estimated to reduce signal delays by 44%, vehicle stops by 41%, and fuel consumption by 13%. In Virginia, a study of retiming signal systems estimated reductions of stops by 25%, travel time by 10%, and fuel consumption by 4%. In California, optimization of 3,172 traffic signals through 1988 (through California's Fuel Efficient Traffic Signal Management program) documented an average reduction in vehicle stops of 16% and in fuel use of 8.6%. The 4-13% reduction in fuel consumption applies only to that vehicular travel directly benefited by the traffic flow improvements, specifically the VMT within the corridor in which the ITS is implemented and only during the times of day that would otherwise be congested without ITS. For example, signal coordination along an arterial normally congested in peak commute hours would produce a 4-13% reduction in fuel consumption only for the VMT occurring along that arterial during weekday commute hours.

Alternate:

- Up to 0.02% *increase* in greenhouse gas (GHG) emissions

Moving Cooler [3] estimates that bottleneck relief will result in an increase in GHG emissions during the 40-year period, 2010 to 2050. In the short term, however,

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MP# TR-2.1 & TR-2.2

RPT-2

Road Pricing Management

improved roadway conditions may improve congestion and delay, and thus reduce fuel consumption. VMT and GHG emissions are projected to increase after 2030 as induced demand begins to consume the roadway capacity. The study estimates a maximum increase of 0.02% in GHG emissions.

Alternative Literature References:

- [2] FHWA, *Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources*. http://www.fhwa.dot.gov/environment/glob_c5.pdf.
- [3] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions*. Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

Other Literature Reviewed:

None

3.6.3 Required Project Contributions to Transportation Infrastructure Improvement Projects

Range of Effectiveness: Grouped strategy. [See RPT-2 and TST-1 through 7]

Measure Description:

The project should contribute to traffic-flow improvements or other multi-modal infrastructure projects that reduce emissions and are not considered as substantially growth inducing. The local transportation agency should be consulted for specific needs.

Larger projects may be required to contribute a proportionate share to the development and/or continuation of a regional transit system. Contributions may consist of dedicated right-of-way, capital improvements, easements, etc. The local transportation agency should be consulted for specific needs.

Refer to Traffic Flow Improvements (RPT-2) or the Transit System Improvements (TST-1 through 7) strategies for a range of effectiveness in these categories. The benefits of Required Contributions may only be quantified when grouped with related improvements.

Measure Applicability:

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

Although no literature discusses project contributions as a standalone measure, this strategy is a supporting strategy for most operations and infrastructure projects listed in this report.

Other Literature Reviewed:

None

Transportation

MP# TR-1

RPT-4

Road Pricing Management

3.6.4 Install Park-and-Ride Lots

Range of Effectiveness: Grouped strategy. [See RPT-1, TRT-11, TRT-3, and TST-1 through 6]

Measure Description:

This project will install park-and-ride lots near transit stops and High Occupancy Vehicle (HOV) lanes. Park-and-ride lots also facilitate car- and vanpooling. Refer to Implement Area or Cordon Pricing (RPT-1), Employer-Sponsored Vanpool/Shuttle (TRT-11), Ride Share Program (TRT-3), or the Transit System Improvement strategies (TST-1 through 6) for ranges of effectiveness within these categories. The benefits of Park-and-Ride Lots are minimal as a stand-alone strategy and should be grouped with any or all of the above listed strategies to encourage carpooling, vanpooling, ride-sharing, and transit usage.

Measure Applicability:

- Suburban and rural context
- Appropriate for residential, retail, office, mixed use, and industrial projects

Alternative Literature:

Alternate:

- 0.1 – 0.5% vehicle miles traveled (VMT) reduction

A 2005 FHWA [1] study found that regional VMT in metropolitan areas may be reduced between 0.1 to 0.5% (citing Apogee Research, Inc., 1994). The reduction potential of this strategy may be limited because it reduces the trip length but not vehicle trips.

Alternate:

- 0.50% VMT reduction per day

Washington State Department of Transportation (WSDOT) [2] notes the above number applies to countywide interstates and arterials.

Alternative Literature References:

[1] FHWA. Transportation and Global Climate Change: A Review and Analysis of the Literature – Chapter 5: Strategies to Reduce Greenhouse Gas Emissions from Transportation Sources.

http://www.fhwa.dot.gov/environment/glob_c5.pdf



Transportation

MP# TR-1

RPT-4

Road Pricing Management

[2] Washington State Department of Transportation. *Cost Effectiveness of Park-and-Ride Lots in the Puget Sound Area.*

<http://www.wsdot.wa.gov/research/reports/fullreports/094.1.pdf>

Other Literature Reviewed:

None



Transportation

MP# TR-6

VT-1

Vehicles

3.7 Vehicles

3.7.1 Electrify Loading Docks and/or Require Idling-Reduction Systems

Range of Effectiveness: 26-71% reduction in TRU idling GHG emissions

Measure Description:

Heavy-duty trucks transporting produce or other refrigerated goods will idle at truck loading docks and during layovers or rest periods so that the truck engine can continue to power the cab cooling elements. Idling requires fuel use and results in GHG emissions.

The Project Applicant should implement an enforcement and education program that will ensure compliance with this measure. This includes posting signs regarding idling restrictions as well as recording engine meter times upon entering and exiting the facility.

Measure Applicability:

- Truck refrigeration units (TRU)

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Horsepower of TRU
- Hours of operation

Baseline Method:

$$\text{GHG emission} = \frac{\text{CO}_2 \text{ Exhaust}}{\text{Activity} \times \text{AvgHP} \times \text{LF}} \times \text{Hp} \times \text{Hr} \times \text{C} \times \text{LF}$$

Where:

GHG emission = MT CO₂e

CO₂ Exhaust = Statewide daily CO₂ emission from TRU for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average TRU operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average TRU horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of TRU.

Hr = Hours of operation.

C = Unit conversion factor



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LF = Load factor of TRU for the relevant horsepower tier (dimensionless).

Obtained from OFFROAD 2007.

Note that this method assumes the load factor of the TRU is same as the default in OFFROAD2007.

Mitigation Method:

Electrify loading docks

TRUs will be plugged into electric loading dock instead of left idling. The indirect GHG emission from electricity generation is:

$$\text{GHG emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:

GHG emissions = MT CO₂e

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Hp = Horsepower of TRU.

LF = Load factor of TRU for the relevant horsepower tier (dimensionless).

Obtained from OFFROAD2007.

Hr = Hours of operation.

C = Unit conversion factor

$$\text{GHG Reduction \%}^{79} = 1 - \frac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$$

Idling Reduction

Emissions from reduced TRU idling periods are calculated using the same methodology for the baseline scenario, but with the shorter hours of operation.

$$\text{GHG Reduction \%} = 1 - \frac{\text{time}_{\text{mitigated}}}{\text{time}_{\text{baseline}}}$$

Electrify loading docks

Power Utility	TRU Horsepower (HP)	Idling Emission Reductions ⁸⁰
LADW&P	< 15	26.3%
	< 25	26.3%
	< 50	35.8%

⁷⁹ This assumes energy from engine losses are the same.

⁸⁰ This reduction percentage applies to all GHG and criteria pollutant idling emissions.

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PG&E	< 15	72.9%
	< 25	72.9%
	< 50	76.3%
SCE	< 15	61.8%
	< 25	61.8%
	< 50	66.7%
SDGE	< 15	53.5%
	< 25	53.5%
	< 50	59.5%
SMUD	< 15	67.0%
	< 25	67.0%
	< 50	71.2%

Idling Reduction

Emission reduction from shorter idling period is same as the percentage reduction in idling time.

Discussion:

The output from OFFROAD2007 shows the same emissions within each horsepower tier regardless of the year modeled. Therefore, the emission reduction is dependent on the location of the Project and horsepower of the TRU only.

Assumptions:

Data based upon the following references:

- California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: <http://www.arb.ca.gov/msei/offroad/offroad.htm>
- California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>

Preferred Literature:

The electrification of truck loading docks can allow properly equipped trucks to take advantage of external power and completely eliminate the need for idling. Trucks would need to be equipped with internal wiring, inverter, system, and a heating, ventilation, and air conditioning (HVAC) system. Under this mitigation measure, the direct emissions from fuel combustion are completely displaced by indirect emissions from the CO₂ generated during electricity production. The amount of electricity required depends on the type of truck and refrigeration elements; this data could be determined from manufacturer specifications. The total kilowatt-hours required should be multiplied by the carbon-intensity factor of the local utility provider in order to calculate the amount of indirect CO₂ emissions. To take credit for this mitigation measure, the Project Applicant

would need to provide detailed evidence supporting a calculation of the emissions reductions.

Alternative Literature:

None

Other Literature Reviewed:

1. USEPA. 2002. Green Transport Partnership, A Glance at Clean Freight Strategies: Idle Reduction. Available online at: <http://nepis.epa.gov/Adobe/PDF/P1000S9K.PDF>
2. ATRI. 2009. Research Results: Demonstration of Integrated Mobile Idle Reduction Solutions. Available online at: <http://www.atrionline.org/research/results/ATRI1pagesummaryMIRTDemo.pdf>

None



Transportation

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VT-2

Vehicles

3.7.2 Utilize Alternative Fueled Vehicles

Range of Effectiveness: Reduction in GHG emissions varies depending on vehicle type, year, and associated fuel economy.

Measure Description:

When construction equipment is powered by alternative fuels such as biodiesel (B20), liquefied natural gas (LNG), or compressed natural gas (CNG) rather than conventional petroleum diesel or gasoline, GHG emissions from fuel combustion may be reduced.

Measure Applicability:

- Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Vehicle category
- Traveling speed (mph)
- Number of trips and trip length, or Vehicle Miles Traveled (VMT)
- Fuel economy (mpg) or Fuel consumption

Baseline Method:

$$\text{Baseline CO}_2 \text{ Emission} = \text{EF} \times \frac{1}{\text{FE}} \times \text{VMT} \times \text{C}$$

Where:

- Baseline CO₂ Emission = MT of CO₂
- EF = CO₂ emission factor, from CCAR General Reporting Protocol (g/gallon)
- VMT = Vehicle miles traveled (VMT) = T x L
- FE = Fuel economy (mpg)
- C = Unit conversion factor

$$\text{Baseline N}_2\text{O /CH}_4 \text{ Emission} = \text{EF} \times \text{VMT} \times \text{C}$$

Where:

- Baseline N₂O/CH₄ Emission = MT of N₂O or CH₄
- EF = N₂O or CH₄ emission factor, from CCAR General Reporting Protocol (g/mile)
- VMT = Vehicle miles traveled (VMT) = T x L
- T = Number of one-way trips
- L = One-way trip length
- FC = Fuel consumption (gallon) = VMT/FE



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FE = Fuel economy (mpg)

C = Unit conversion factor

The total baseline GHG emission is the sum of the emissions of CO₂, N₂O and CH₄, adjusted by their global warming potentials (GWP):

Baseline GHG Emission

$$= \text{Baseline CO}_2 \text{ Emission} + \text{Baseline N}_2\text{O Emission} \times 310 + \text{Baseline CH}_4 \text{ Emission} \times 21$$

Where:

$$\begin{aligned} \text{Baseline GHG Emission} &= \text{MT of CO}_2\text{e} \\ 310 &= \text{GWP of N}_2\text{O} \\ 21 &= \text{GWP of CH}_4 \end{aligned}$$

Mitigation Method:

Mitigated emissions from using alternative fuel is calculated using the same methodology before, but using emission factors for the alternative fuel, and fuel consumption calculated as follows:

$$\text{GHG Emissions} = \frac{1}{\text{FE}} \times \text{ER} \times \text{VMT} \times \text{EF}_{\text{CO}_2} + \text{VMT} \times \text{EF}_{\text{N}_2\text{O}} + \text{VMT} \times \text{EF}_{\text{CH}_4}$$

Where:

ER = Energy ratio from US Department of Energy (see table below)

EF = Emission Factor for pollutant

VMT = Vehicle miles traveled (VMT)

FE = Fuel economy (mpg)

Fuel	Energy Ratio:			
	Amount of fuel needed to provide same energy as			
	1 gallon of Gasoline		1 gallon of Diesel	
Gasoline	1	gal	1.13	gal
#2 Diesel	0.88	gal	1	gal
B20	0.92	gal	1.01	gal
CNG	126.	ft ³	143.14	ft ³
LNG	67	gal	1.77	gal
LPC	1.56	gal	1.55	gal

Emission reductions can be calculated as:

$$\text{Reduction} = 1 - \frac{\text{Mitigated Emission}}{\text{Running Emission}}$$

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Range Not Quantified ⁸¹
PM	Range Not Quantified
CO	Range Not Quantified
NOx	Range Not Quantified
SO ₂	Range Not Quantified
ROG	Range Not Quantified

Discussion:

Using the methodology described above, only the running emission is considered. A hypothetical scenario for a gasoline fueled light duty automobile in 2015 is illustrated below. The CO₂ emission factor from motor gasoline in CCAR 2009 is 8.81 kg/gallon. Assuming the automobile makes two trips of 60 mile each per day, and using the current passenger car fuel economy of 27.5 mpg under the CAFE standards, then the annual baseline CO₂ emission from the automobile is:

$$8.81 \times \frac{2 \times 60 \times 365}{27.5} \times 10^{-3} = 14.0 \text{ MT/year}$$

Where 10⁻³ is the conversion factor from kilograms to MT.

Using the most recent N₂O emission factor of 0.0079 g/mile in CCAR 2009 for gasoline passenger cars, the annual baseline N₂O emission from the automobile is:

$$0.0079 \times 2 \times 365 \times 60 \times 10^{-6} = 0.000346 \text{ MT/year}$$

⁸¹ The emissions reductions varies and depends on vehicle type, year, and the associated fuel economy. The methodology above describes how to calculate the expected GHG emissions reduction assuming the required input parameters are known.

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Similarly, using the same formula with the most recent CH₄ emission factor of 0.0147 g/mile in CCAR 2009 for gasoline passenger cars, the annual baseline CH₄ emission from the automobile is calculated to be 0.000644 MT/year.

Thus, the total baseline GHG emission for the automobile is:

$$14.0 + 0.000346 \times 310 + 0.000644 \times 21 = 14.1 \text{ MT/year}$$

If compressed natural gas (CNG) is used as alternative fuel, the CNG consumption for the same VMT is:

$$\frac{2 \times 60 \times 365}{27.5} \times 126.67 = 201,751 \text{ ft}^3$$

Using the same formula as for the baseline scenario but with emission factors of CNG and the CNG consumption, the mitigated GHG emission can be calculated as shown in the table below

Pollutant	Emission (MT/yr)
CO ₂	11.0
N ₂ O	0.0022
CH ₄	0.0323
CO ₂ e	12.4

Therefore, the emission reduction is:

$$1 - \frac{12.4}{14.0} = 11.4\%$$

Notice that in the baseline scenario, N₂O and CH₄ only make up <1% of the total GHG emissions, but actually increase for the mitigated scenario and contribute to >10% of total GHG emissions.

Assumptions:

Data based upon the following references:

- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: <http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html>

- US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: <http://www.afdc.energy.gov/afdc/fuels/properties.html>

Preferred Literature:

The amount of emissions avoided from using alternative fuel vehicles can be calculated using emission factors from the California Climate Action Registry (CCAR) General Reporting Protocol [1]. Multiplying this factor by the fuel consumption or vehicle miles traveled (VMT) gives the direct emissions of CO₂ and N₂O /CH₄, respectively. Fuel consumption and VMT can be calculated interchangeably with the fuel economy (mpg). The total GHG emission is the sum of the emissions from the three chemicals multiplied by their respective global warming potential (GWP).

Assuming the same VMT, the amount of alternative fuel required to run the same vehicle fleet can be calculated by multiplying gasoline/diesel fuel consumption by the equivalent-energy ratio obtained from the US Department of Energy [2]. Using the alternative fuel consumption and the emission factors for the alternative fuel from CCAR, the mitigated GHG emissions can be calculated. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Alternative Literature:

None

Notes:

- [1] California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: <http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html>
- [2] US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: <http://www.afdc.energy.gov/afdc/fuels/properties.html>

Other Literature Reviewed:

None

3.7.3 Utilize Electric or Hybrid Vehicles

Range of Effectiveness: 0.4 - 20.3% reduction in GHG emissions

Measure Description:

When vehicles are powered by grid electricity rather than fossil fuel, direct GHG emissions from fuel combustion are replaced with indirect GHG emissions associated with the electricity used to power the vehicles. When vehicles are powered by hybrid-electric drives, GHG emissions from fuel combustion are reduced.

Measure Applicability:

- Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Vehicle category
- Traveling speed (mph)
- Number of trips and trip length, or Vehicle Miles Traveled (VMT)
- Fuel economy (mpg)

Baseline Method:

$$\text{Baseline Emission} = \text{EF} \times (1 - \text{R}) \times \text{VMT} \times \text{C}$$

Where:

Baseline Emission = MT of Pollutant

EF = Running emission factor for pollutant at traveling speed, from EMFAC.

VMT = Vehicle miles traveled (VMT)

R = Additional reduction in EF due to regulation (see Table 1)

C = Unit conversion factor

Mitigation Method:

Fully Electric Vehicle

Vehicle will run solely on electricity. The indirect GHG emission from electricity generation is:

$$\text{Mitigated Emission} = \text{Utility} \times \frac{1}{\text{FE}} \times \text{VMT} \times \text{ER} \times \text{C}$$



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Where:

- Mitigated Emission = MT of CO₂e
- Utility = Carbon intensity of Local Utility (CO₂e/kWh)
- VMT = Vehicle miles traveled (VMT)
- ER = Energy Ratio = 33.4 kWh/gallon-gasoline or 37.7 kWh/gallon-diesel
- FE = Fuel Economy (mpg)
- C = Unit conversion factor

Power Utility	Carbon-Intensity (lbs CO ₂ e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Criteria pollutant emissions will be 100% reduced for equipment running solely on electricity.

Hybrid-Electric Vehicle

The Project Applicant has to determine the fuel consumption reduced from using the hybrid-electric vehicle. The emission reductions for all pollutants are the same as the fuel reduction.

Emission reductions can be calculated as:

$$\text{GHG Reduction\%} = 1 - \frac{\text{Mitigated Emission}}{\text{Running Emission}}$$

Emission Reduction Ranges and Variables:

See Table VT-3.1 below.

Discussion:

Using the methodology described above, only the running emission is considered. A hypothetical scenario for a gasoline fueled light duty automobile with catalytic converter in 2015 is illustrated below. The running CO₂ emission factor at 30 mph from an EMFAC run of the Sacramento county with temperature of 60F and relative humidity of 45% is 336.1 g/mile. From Table VT-3.1, there will be an additional reduction of 9.1% for the emission factor in 2015 due to Pavley standard. Assuming the automobile makes two trips of 60 mile each per day, then annual baseline emission from the automobile is:

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$$336.1 \times (100\% - 9.1\%) \times 2 \times 365 \times 60 \times 10^{-6} = 13.4 \text{ MT/year}$$

Where 10^{-6} is the conversion factor from grams to MT. Assuming the current passenger car fuel economy of 27.5 mpg under the CAFE standards, and using the carbon-intensity factor for PG&E, the electric provider for the Sacramento region, the mitigated emission from replacing the automobile described above with electric vehicle would be:

$$\left(456 \times \frac{2 \times 365 \times 60}{27.5} \times 33.4 \times \frac{1}{2,204 \times 10^3} \right) = 11.0 \text{ MT/year}$$

Therefore, the emission reduction is:

$$1 - \frac{11.0}{13.4} = 17.9\%$$

Assumptions:

Data based upon the following references:

- California Air Resources Board. EMFAC2007. Available online at: http://www.arb.ca.gov/msei/onroad/latest_version.htm
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: <http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html>
- California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>
- US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties. Available online at: <http://www.afdc.energy.gov/afdc/fuels/properties.html>

Preferred Literature:

The amount of emissions avoided from using electric and hybrid vehicles can be calculated using CARB's EMFAC model, which provides state-wide and regional running emission factors for a variety of on-road vehicles in units of grams per mile [1]. Multiplying this factor by the vehicle miles traveled (VMT) gives the direct emissions. For criteria pollutant, emissions can be assumed to be 100% reduced from running on electricity. For GHG, assuming the same VMT, the electricity required to run the same vehicle fleet can be calculated by dividing by the fuel economy (mpg) and multiplying the gasoline-electric energy ratio obtained from the US Department of Energy [2]. Multiplying this value by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with electric vehicles. The GHG emissions

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reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Alternative Literature:

None

Notes:

[1] California Air Resources Board. EMFAC2007. Available online at:
http://www.arb.ca.gov/msei/onroad/latest_version.htm

[2] US Department of Energy. 2010. Alternative and Advanced Fuels – Fuel Properties.
Available online at: <http://www.afdc.energy.gov/afdc/fuels/properties.html>

Other Literature Reviewed:

None

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Vehicles

**Table VT-3.1
Reduction in EMFAC Running Emission Factor from New Regulations**

Year	Vehicle Class	Reduction	Pollutant	Regulation
2010	LDA/LDT/MDV	0.4%	CO ₂	Pavley Standard
2011	LDA/LDT/MDV	1.6%	CO ₂	Pavley Standard
2012	LDA/LDT/MDV	3.5%	CO ₂	Pavley Standard
2013	LDA/LDT/MDV	5.3%	CO ₂	Pavley Standard
2014	LDA/LDT/MDV	7.1%	CO ₂	Pavley Standard
2015	LDA/LDT/MDV	9.1%	CO ₂	Pavley Standard
2016	LDA/LDT/MDV	11.0%	CO ₂	Pavley Standard
2017	LDA/LDT/MDV	13.1%	CO ₂	Pavley Standard
2018	LDA/LDT/MDV	15.5%	CO ₂	Pavley Standard
2019	LDA/LDT/MDV	17.9%	CO ₂	Pavley Standard
2020	LDA/LDT/MDV	20.3%	CO ₂	Pavley Standard
2011	Other Buses	21.8%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	School Bus	19.8%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Agriculture	17.2%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT CA International Registration Plan	4.6%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Instate	6.1%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Out-of-state	4.6%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Agriculture	23.3%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT CA International Registration Plan	1.7%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Non-neighboring Out-of-state	0.5%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Neighboring Out-of-state	2.6%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Singleunit	10.3%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Tractor	9.7%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Other Buses	25.1%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Power Take Off	28.4%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	School Bus	45.7%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Agriculture	20.9%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT CA International Registration Plan	12.6%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Instate	11.6%	PM _{2.5}	On-Road Heavy-Duty Diesel Vehicles Regulation



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Year	Vehicle Class	Reduction	Pollutant	Regulation
				Regulation
2012	MHDDT Out-of-state	12.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Agriculture	29.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT CA International Registration Plan	8.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Non-neighboring Out-of-state	15.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Neighboring Out-of-state	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage at Other Facilities	9.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage in Bay Area	9.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Drayage near South Coast	7.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Singleunit	14.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Tractor	13.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Other Buses	45.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Power Take Off	57.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	School Bus	68.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Agriculture	31.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT CA International Registration Plan	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Instate	64.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Out-of-state	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Agriculture	48.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT CA International Registration Plan	60.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Non-neighboring Out-of-state	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Neighboring Out-of-state	63.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage at Other Facilities	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage in Bay Area	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Drayage near South Coast	51.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation



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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2013	HHDDT Singleunit	66.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Tractor	69.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Other Buses	53.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Power Take Off	63.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	School Bus	71.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Agriculture	33.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT CA International Registration Plan	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Instate	77.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Out-of-state	65.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Agriculture	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT CA International Registration Plan	63.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Non-neighboring Out-of-state	46.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Neighboring Out-of-state	64.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Singleunit	79.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Tractor	79.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Utility	4.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Other Buses	49.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Power Take Off	61.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	School Bus	71.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Agriculture	34.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT CA International Registration Plan	60.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Instate	74.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Out-of-state	60.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

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Year	Vehicle Class	Reduction	Pollutant	Regulation
2015	HHDDT Agriculture	53.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT CA International Registration Plan	55.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Non-neighboring Out-of-state	37.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Neighboring Out-of-state	55.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Singleunit	77.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Tractor	76.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Utility	4.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Other Buses	43.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Power Take Off	75.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	School Bus	70.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Agriculture	32.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT CA International Registration Plan	56.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Instate	73.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Out-of-state	56.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Agriculture	51.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT CA International Registration Plan	45.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Non-neighboring Out-of-state	27.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Neighboring Out-of-state	46.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Singleunit	75.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Tractor	73.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Utility	4.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Other Buses	36.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Power Take Off	71.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	School Bus	67.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

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Year	Vehicle Class	Reduction	Pollutant	Regulation
2017	MHDDT Agriculture	55.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT CA International Registration Plan	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Instate	70.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Out-of-state	52.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Agriculture	58.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT CA International Registration Plan	37.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Non-neighboring Out-of-state	18.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Neighboring Out-of-state	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Singleunit	73.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Tractor	70.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Utility	3.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Other Buses	31.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Power Take Off	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	School Bus	74.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Agriculture	53.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT CA International Registration Plan	47.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Instate	68.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Out-of-state	47.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Agriculture	55.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT CA International Registration Plan	30.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Non-neighboring Out-of-state	11.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Neighboring Out-of-state	30.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Singleunit	72.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation



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Year	Vehicle Class	Reduction	Pollutant	Regulation
2018	HHDDT Tractor	67.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Utility	3.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Other Buses	27.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Power Take Off	76.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	School Bus	73.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Agriculture	53.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT CA International Registration Plan	42.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Instate	65.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Out-of-state	42.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Agriculture	54.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT CA International Registration Plan	24.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Non-neighboring Out-of-state	5.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Neighboring Out-of-state	24.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Singleunit	69.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Tractor	64.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Utility	3.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Other Buses	23.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Power Take Off	74.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	School Bus	71.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Agriculture	52.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT CA International Registration Plan	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Instate	60.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Out-of-state	37.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Utility	0.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

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Year	Vehicle Class	Reduction	Pollutant	Regulation
2020	HHDDT Agriculture	52.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT CA International Registration Plan	19.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Non-neighboring Out-of-state	3.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Neighboring Out-of-state	20.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Singleunit	66.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Tractor	61.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Utility	2.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Other Buses	21.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Power Take Off	79.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	School Bus	68.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Agriculture	51.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT CA International Registration Plan	33.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Instate	57.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Out-of-state	33.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Utility	5.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Agriculture	50.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT CA International Registration Plan	16.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Non-neighboring Out-of-state	3.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Neighboring Out-of-state	16.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage at Other Facilities	10.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage in Bay Area	9.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage near South Coast	9.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Singleunit	64.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Tractor	59.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Utility	5.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

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Year	Vehicle Class	Reduction	Pollutant	Regulation
2022	Other Buses	20.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	Power Take Off	79.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	School Bus	66.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Agriculture	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT CA International Registration Plan	28.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Instate	53.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Out-of-state	28.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Utility	6.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Agriculture	49.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT CA International Registration Plan	13.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Non-neighboring Out-of-state	1.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Neighboring Out-of-state	14.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage at Other Facilities	10.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage in Bay Area	8.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage near South Coast	8.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Singleunit	61.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Tractor	55.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Utility	5.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Other Buses	18.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Power Take Off	74.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	School Bus	64.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Agriculture	79.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT CA International Registration Plan	23.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Instate	48.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Out-of-state	23.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation



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Year	Vehicle Class	Reduction	Pollutant	Regulation
2023	MHDDT Utility	7.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Agriculture	68.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT CA International Registration Plan	11.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Non-neighboring Out-of-state	1.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Neighboring Out-of-state	11.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage at Other Facilities	9.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage in Bay Area	8.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage near South Coast	8.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Singleunit	56.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Tractor	51.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Utility	4.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Other Buses	15.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Power Take Off	68.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	School Bus	61.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Agriculture	77.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT CA International Registration Plan	20.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Instate	43.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Out-of-state	20.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Utility	5.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Agriculture	65.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT CA International Registration Plan	9.1%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Non-neighboring Out-of-state	0.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Neighboring Out-of-state	9.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage at Other Facilities	9.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage in Bay Area	7.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation

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Year	Vehicle Class	Reduction	Pollutant	Regulation
2024	HHDDT Drayage near South Coast	7.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Singleunit	50.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Tractor	46.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Utility	3.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Other Buses	13.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Power Take Off	62.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	School Bus	58.2%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Agriculture	75.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT CA International Registration Plan	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Instate	37.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Out-of-state	15.3%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Utility	3.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Agriculture	62.7%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT CA International Registration Plan	6.8%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Non-neighboring Out-of-state	0.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Neighboring Out-of-state	7.0%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage at Other Facilities	8.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage in Bay Area	7.5%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage near South Coast	7.6%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Singleunit	44.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Tractor	42.9%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Utility	2.4%	PM2.5	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT CA International Registration Plan	1.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Instate	2.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	MHDDT Out-of-state	1.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation



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Year	Vehicle Class	Reduction	Pollutant	Regulation
2011	HHDDT CA International Registration Plan	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Non-neighboring Out-of-state	0.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Neighboring Out-of-state	1.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Singleunit	4.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2011	HHDDT Tractor	3.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	Power Take Off	13.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	School Bus	2.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT CA International Registration Plan	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Instate	2.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	MHDDT Out-of-state	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT CA International Registration Plan	0.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Non-neighboring Out-of-state	0.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Neighboring Out-of-state	0.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Singleunit	3.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2012	HHDDT Tractor	3.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Other Buses	18.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	Power Take Off	34.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	School Bus	4.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Agriculture	5.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT CA International Registration Plan	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Instate	25.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	MHDDT Out-of-state	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Agriculture	10.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT CA International Registration Plan	8.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Non-neighboring Out-of-state	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Year	Vehicle Class	Reduction	Pollutant	Regulation
2013	HHDDT Neighboring Out-of-state	8.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Singleunit	33.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2013	HHDDT Tractor	28.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Other Buses	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	Power Take Off	37.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	School Bus	6.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Agriculture	9.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT CA International Registration Plan	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Instate	34.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Out-of-state	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	MHDDT Utility	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Agriculture	17.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT CA International Registration Plan	13.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Non-neighboring Out-of-state	4.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Neighboring Out-of-state	14.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Singleunit	45.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Tractor	36.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2014	HHDDT Utility	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Other Buses	52.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	Power Take Off	33.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	School Bus	6.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Agriculture	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT CA International Registration Plan	20.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Instate	31.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	MHDDT Out-of-state	20.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation



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Year	Vehicle Class	Reduction	Pollutant	Regulation
2015	MHDDT Utility	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Agriculture	27.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT CA International Registration Plan	11.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Non-neighboring Out-of-state	2.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Neighboring Out-of-state	12.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Singleunit	42.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Tractor	34.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2015	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Other Buses	54.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	Power Take Off	43.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	School Bus	4.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Agriculture	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT CA International Registration Plan	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Instate	32.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Out-of-state	22.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	MHDDT Utility	0.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Agriculture	29.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT CA International Registration Plan	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Non-neighboring Out-of-state	3.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Neighboring Out-of-state	13.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Singleunit	43.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Tractor	35.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2016	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Other Buses	59.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	Power Take Off	38.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2017	MHDDT Agriculture	43.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT CA International Registration Plan	27.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Instate	35.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Out-of-state	27.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	MHDDT Utility	1.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Agriculture	45.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT CA International Registration Plan	14.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Non-neighboring Out-of-state	7.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Neighboring Out-of-state	17.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Singleunit	46.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Tractor	38.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2017	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Other Buses	56.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	Power Take Off	32.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	School Bus	7.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Agriculture	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT CA International Registration Plan	26.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Instate	41.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Out-of-state	26.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	MHDDT Utility	1.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Agriculture	42.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT CA International Registration Plan	15.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Non-neighboring Out-of-state	4.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Neighboring Out-of-state	16.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Singleunit	51.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2018	HHDDT Tractor	43.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2018	HHDDT Utility	1.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Other Buses	52.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	Power Take Off	38.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	School Bus	6.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Agriculture	40.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT CA International Registration Plan	22.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Instate	38.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Out-of-state	22.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	MHDDT Utility	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Agriculture	40.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT CA International Registration Plan	12.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Non-neighboring Out-of-state	2.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Neighboring Out-of-state	13.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Singleunit	48.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Tractor	41.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2019	HHDDT Utility	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Other Buses	49.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	Power Take Off	41.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	School Bus	5.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Agriculture	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT CA International Registration Plan	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Instate	34.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Out-of-state	19.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	MHDDT Utility	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2020	HHDDT Agriculture	38.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT CA International Registration Plan	9.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Non-neighboring Out-of-state	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Neighboring Out-of-state	10.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Singleunit	45.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Tractor	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2020	HHDDT Utility	1.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Other Buses	48.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	Power Take Off	51.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	School Bus	4.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Agriculture	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT CA International Registration Plan	21.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Instate	41.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Out-of-state	21.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	MHDDT Utility	33.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Agriculture	37.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT CA International Registration Plan	9.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Non-neighboring Out-of-state	1.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Neighboring Out-of-state	9.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage at Other Facilities	40.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage in Bay Area	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Drayage near South Coast	39.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Singleunit	54.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Tractor	45.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2021	HHDDT Utility	21.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2022	Other Buses	48.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	Power Take Off	60.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	School Bus	3.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Agriculture	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT CA International Registration Plan	20.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Instate	41.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Out-of-state	20.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	MHDDT Utility	28.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Agriculture	40.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT CA International Registration Plan	8.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Non-neighboring Out-of-state	1.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Neighboring Out-of-state	9.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage at Other Facilities	39.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage in Bay Area	40.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Drayage near South Coast	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Singleunit	54.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Tractor	45.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2022	HHDDT Utility	18.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Other Buses	47.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	Power Take Off	54.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	School Bus	2.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Agriculture	65.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT CA International Registration Plan	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Instate	39.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	MHDDT Out-of-state	18.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2023	MHDDT Utility	25.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Agriculture	59.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT CA International Registration Plan	7.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Non-neighboring Out-of-state	1.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Neighboring Out-of-state	8.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage at Other Facilities	38.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage in Bay Area	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Drayage near South Coast	38.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Singleunit	52.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Tractor	44.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2023	HHDDT Utility	16.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Other Buses	43.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	Power Take Off	47.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	School Bus	1.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Agriculture	63.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT CA International Registration Plan	15.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Instate	33.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Out-of-state	15.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	MHDDT Utility	19.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Agriculture	56.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT CA International Registration Plan	6.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Non-neighboring Out-of-state	0.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Neighboring Out-of-state	6.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage at Other Facilities	38.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Drayage in Bay Area	39.4%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation



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Vehicles

Year	Vehicle Class	Reduction	Pollutant	Regulation
2024	HHDDT Drayage near South Coast	37.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Singleunit	47.2%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Tractor	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2024	HHDDT Utility	13.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Other Buses	39.0%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	Power Take Off	39.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	School Bus	1.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Agriculture	61.1%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT CA International Registration Plan	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Instate	28.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Out-of-state	11.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	MHDDT Utility	13.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Agriculture	53.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT CA International Registration Plan	4.6%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Non-neighboring Out-of-state	0.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Neighboring Out-of-state	4.8%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage at Other Facilities	37.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage in Bay Area	38.9%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Drayage near South Coast	37.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Singleunit	41.5%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Tractor	35.7%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation
2025	HHDDT Utility	10.3%	NOx	On-Road Heavy-Duty Diesel Vehicles Regulation

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Water Supply

4.0 Water

4.1 Water Supply

4.1.1 Use Reclaimed Water

Range of Effectiveness: Up to 40% in Northern California and up to 81% in Southern California

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. In addition, treating water to potable standards can also require substantial amounts of energy. Reclaimed water is water reused after wastewater treatment for non-potable uses instead of returning the water to the environment. This is different than gray water, which has not been through wastewater treatment. Reclaimed non-potable water requires significantly less energy to collect, treat, and redistribute water to the point of local areas of non-potable water consumption. Since less energy is required to provide reclaimed water, fewer GHGs will be associated with reclaimed water use compared to the average California water supply use.

This measure describes how to calculate GHG savings from using reclaimed water instead of new potable water supplies for outdoor water uses or other non-potable water uses. The baseline scenario document outlines average Northern and Southern California electricity-use water factors, and assumes that all water is treated to potable standards.

Measure Applicability:

- Non-potable water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Reclaimed water use (million gallons)
- Total non-potable water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{non-potable total}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

Water

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Water Supply

- GHG emissions = MT CO₂e
- Water_{non-potable total} = Total volume of non-potable water used (million gallons)
Provided by Applicant
- Electricity_{baseline} = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons
- Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

A million gallons of reclaimed water would use an average of 2,100 kWh electricity per million gallons of water (range of 1,200 to 3,000 kWh). Therefore the percent reduction in GHG emissions associated with implementing reclaimed water usage is:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{reclaimed}}}{\text{Water}_{\text{non-potable total}}} \times \frac{\text{Electricity}_{\text{baseline}} - \text{Electricity}_{\text{reclaimed}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

- GHG emission reduction = Percentage reduction in GHG emissions for non-potable water use.
- Water_{reclaimed} = Total volume of reclaimed water used (million gallons)
Provided by Applicant
- Water_{non-potable total} = Total volume of non-potable water used (million gallons)
Provided by Applicant
- Electricity_{reclaimed} = Electricity required to treat and distribute reclaimed water (2,100 kWh/million gallons)
- Electricity_{baseline} = Electricity required to supply and distribute water
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons

Therefore, for projects in Northern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{reclaimed}}}{\text{Water}_{\text{non-potable total}}} \times \frac{(3,500 - 2,100)}{3,500} = \frac{\text{Water}_{\text{reclaimed}}}{\text{Water}_{\text{non-potable total}}} \times 0.40$$

And for projects in Southern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{reclaimed}}}{\text{Water}_{\text{non-potable total}}} \times \frac{(11,111 - 2,100)}{11,111} = \frac{\text{Water}_{\text{reclaimed}}}{\text{Water}_{\text{non-potable total}}} \times 0.81$$

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Water Supply

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	N. California: Up to 40% if assuming 100% reclaimed water
	S. California: Up to 81% if assuming 100% reclaimed water
	Percent reduction would scale down linearly as the percent reclaimed water decreases.
All other pollutants	Not quantified ⁸²

Discussion:

If the Project Applicant uses 100 million gallons of non-potable water for a project in Northern California, they would calculate baseline emissions as described in the baseline methodologies document. If the applicant then selects to mitigate water by committing to using 40 million gallons of reclaimed water in place of the usual water source, the applicant would reduce the amount of GHG emissions associated with outdoor water use by 16%

$$\text{GHG Emission Reduced} = \frac{40}{100} \times 0.40 = 0.16 \text{ or } 16\%$$

Assumptions:

Data based upon the following reference:

- [1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

Preferred Literature:

GHG emissions from the mitigated scenario should be calculated based on the 2006 CEC report, which presents regional baseline electricity-use water factors and a factor of 1,200-3,000 kWh per million gallons for reclaimed water. GHG emissions are calculated by multiplying the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO₂e per kWh). The GHG emissions reductions associated with this mitigation measure are

⁸² Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.



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associated with the difference between the baseline potable water electricity-use water factor and the mitigated scenario.

Alternative Literature:

None

Other Literature Reviewed:

None

Water

MP# COS-2.3

WSW-2

Water Supply

4.1.2 Use Gray Water

Range of Effectiveness: Up to 100% of outdoor water GHG emissions if outdoor water use is replaced completely with graywater

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. In addition, treating water to potable standards can also require substantial amounts of energy. Untreated wastewater generated from bathtubs, showers, bathroom wash basins, and clothes washing machines is known as graywater and is collected and distributed onsite for irrigation of landscape and mulch. Since graywater does not require treatment or energy to redistribute it onsite, there are negligible GHG emissions associated with the use of graywater.

This measure describes how to calculate GHG savings from using graywater instead of new potable water supplies for landscape irrigation and other outdoor uses. The baseline scenario document outlines average Northern and Southern California electricity-use water factors, and assumes that all water is non-potable.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Graywater use⁸³ (million gallons), or:
 - Type of graywater system, which must be compliant with the California Plumbing Code, and
 - Number of residents in homes with compliant graywater systems
- Total outdoor water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{outdoor total}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

⁸³ Note that this is the amount of graywater used, which may be less than the amount of graywater generated. A project may generate and collect more graywater than is needed for landscape irrigation. The Project Applicant should only take credit for the amount of potable water which is displaced by graywater. The amount of landscape irrigation water demand (graywater demand) is calculated according to the methodology described in WUW-3 and the baseline methodologies document.

Water

MP# COS-2.3

WSW-2

Water Supply

Where:

- GHG emissions = MT CO₂e
- Water_{outdoor total} = Total volume of outdoor water used (million gallons)
Provided by Applicant
- Electricity_{baseline} = Electricity required to supply, treat, and distribute water (kWh/million gallons)
Northern California Average: 3,500 kWh/million gallons
Southern California Average: 11,111 kWh/million gallons
- Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

If the Project Applicant cannot provide the total amount of graywater used, the graywater use can be calculated based on the following equation:

$$\text{Water}_{\text{graywater}} = \left[(25 \times \text{Residents}_{\text{graywater-sbw}}) + (15 \times \text{Residents}_{\text{graywater-laundry}}) \right] \frac{\text{gallons}}{\text{day}} \times \frac{365 \text{ days}}{\text{year}} \times \frac{1 \text{ million gallons}}{10^6 \text{ gallons}}$$

Where:

- Water_{graywater} = Total volume of graywater used (million gallons).
- Residents_{graywater-sbw} = Total number of residents in homes with graywater systems based on graywater generated from showers, bathtubs, and wash basins
25 = gallons per day per residential occupant from showers, bathtubs, and washbasins [1]
- Residents_{graywater-laundry} = Total number of residents in homes with graywater systems based on graywater generated from laundry machines
15 = gallons per day per residential occupant from laundry machines [1]

The percent reduction in GHG emissions associated with implementing graywater usage is therefore:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{graywater}}}{\text{Water}_{\text{outdoor total}}} \times \frac{\text{Electricity}_{\text{baseline}} - \text{Electricity}_{\text{graywater}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

- GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.
- Water_{graywater} = Total volume of graywater used (million gallons)
Provided by Applicant or calculated using equation above
- Water_{outdoor total} = Total volume of outdoor water used (million gallons)
Provided by Applicant

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Water Supply

Electricity_{graywater} = Electricity required to distribute graywater (0 kWh/million gallons)⁸⁴

Electricity_{baseline} = Electricity required to supply, treat, and distribute water
 Northern California Average: 3,500 kWh/million gallons [2]
 Southern California Average: 11,111 kWh/million gallons [2]

Therefore, for projects in Northern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{graywater}}}{\text{Water}_{\text{outdoor total}}} \times \frac{(3,500 - 0)}{3,500} = \frac{\text{Water}_{\text{graywater}}}{\text{Water}_{\text{outdoor total}}}$$

And for projects in Southern California, the reduction in GHG emissions is:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{graywater}}}{\text{Water}_{\text{outdoor total}}} \times \frac{(11,111 - 0)}{11,111} = \frac{\text{Water}_{\text{graywater}}}{\text{Water}_{\text{outdoor total}}}$$

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	N. California: Up to 100% if assuming 100% graywater S. California: Up to 100% if assuming 100% graywater Percent reduction would scale down linearly as the percent reclaimed water decreases.
All other pollutants	Not Quantified ⁸⁵

Discussion:

If the Project Applicant uses 100 million gallons of water for outdoor uses in a project in Northern California, they would calculate baseline emissions as described above and in the baseline methodologies document. If the Project Applicant then selects to mitigate water by committing to establishing graywater systems based on graywater recovery from laundry machines in 500 homes with an average of 3 people in each home, the amount of graywater used is then:

⁸⁴ In some cases the distribution of graywater will require some amount of electricity; for example, graywater generated at residences and pumped to a nearby park. In those cases, Electricity_{graywater} will be non-zero.

⁸⁵ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.



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Water Supply

Water_{graywater} =

$$[(25 \times 0) + (15 \times 500 \times 3)] \frac{\text{gallons}}{\text{day}} \times \frac{365 \text{ days}}{\text{year}} \times \frac{1 \text{ million gallons}}{10^6 \text{ gallons}} = 8.2 \text{ million gallons}$$

Then the Project Applicant would reduce the amount of GHG emissions associated with outdoor water use by 8.2%

$$\text{GHG Emission Reduced} = \frac{8.2}{100} = 0.082 \text{ or } 8.2\%$$

Assumptions:

Data based upon the following references:

- [1] 2007 CPC, Title 24, Part 5, Chapter 16A, Part I – Nonpotable Water Reuse Systems. Available online at:
http://www.hcd.ca.gov/codes/shl/2007CPC_Graywater_Complete_2-2-10.pdf
- [2] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at:
<http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

Preferred Literature:

Assuming a compliant graywater system is installed, Part 1606A.0 of the California Plumbing Code (CPC) estimates 25 gallons per day per residential occupant of graywater generation from showers, bathtubs, and wash basins, and 15 gallons per day per residential occupant of graywater discharge from laundry machines. Electricity and CO₂ savings from using graywater are determined by comparing to the emissions that would have been associated with the water use if the graywater demand had instead been supplied by potable water. The baseline emissions should be calculated based on the 2006 CEC methodology. A development may generate and collect more graywater than is needed for landscape irrigation. A Project Applicant should only take credit for emissions reductions associated with the amount of potable water which is displaced by graywater. The amount of landscape irrigation water demand (graywater demand) is calculated according to the methodology described in the baseline methodologies document and WUW-3.

Alternative Literature:

None



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Water Supply

Other Literature Reviewed:

- [3] Arizona Department of Environmental Quality. 2009. Using Gray Water at Home Brochure. Available online at: <http://www.azdeq.gov/environ/water/permits/download/graybro.pdf>
- [4] Arizona Department of Water Resources. Technologies – Irrigation, Rainwater Harvesting, Gray Water Reuse and Artificial Turf. Available online at: <http://www.azwater.gov/AzDWR/StatewidePlanning/Conservation2/Technologies/Tech%20pages%20templates/Landscapelrrigation.htm>. Accessed February 2010.
- [5] AAC, Title 18, Chapter 9, Article 7. Direct Reuse of Reclaimed Water. Available online at: http://www.azsos.gov/public_services/title_18/18-09.pdf
- [6] Oasis Design. Graywater Information Central. Available online at: <http://www.graywater.net/>. Accessed February 2010.

Water

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Water Supply

4.1.3 Use Locally Sourced Water Supply

Range of Effectiveness: 0 – 60% for Northern and Central California, 11 – 75% for Southern California

Measure Description:

California water supplies come from ground water, surface water, and from reservoirs, typically fed from snow melt. Some sources of water are transported over long distances, and sometimes over terrain to reach the point of consumption. Transporting water can require a significant amount of electricity. Using locally-sourced water or water from less energy-intensive sources reduces the electricity and indirect CO₂ emissions associated with water supply and transport.

This measure describes how to calculate GHG savings from using local or less energy-intensive water sources instead of water from the typical mix of Northern and Southern California sources. According to the 2006 CEC report [1], water in Northern California (which also includes the Central Coast and San Joaquin Valley for this study) is primarily supplied by deliveries from the State Water Project and groundwater, and to a lesser extent is supplied by the gravity-dominated systems of Hetch Hetchy and the Mokelumne Aqueduct. In contrast, water imported from the State Water Project is Southern California's dominant water source. The baseline scenario uses average Northern and Southern California electricity intensity factors as reported in 2006 CEC and detailed in the Baseline Method below.

Measure Applicability:

- Indoor (potable) and outdoor (non-potable) water use

Inputs:

- Total potable and non-potable water use (million gallons)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity}_{\text{baseline}} \times \text{Utility}$$

Where:

GHG emissions = MT CO₂e

Water_{baseline} = Total volume of water used (million gallons)
Provided by Applicant

Electricity_{baseline} = Electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) (kWh/million gallons)

Indoor Uses:

Northern California Average: 5,411 kWh/million gallons [1]

Southern California Average: 13,022 kWh/million gallons [1]

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Outdoor Uses:

Northern California Average: 3,500 kWh/million gallons [1]

Southern California Average: 11,111 kWh/million gallons [1]

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

Table WSW-3.1 shows that water from local or nearby groundwater basins, nearby surface water, and gravity-dominated systems have smaller energy-intensity factors than the average Northern and Southern California energy-intensity factors. The Project Applicant should use Table WSW-3.1 to identify the outdoor and indoor electricity intensity factors associated with the Project's water source(s). The GHG emission reduction is then calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}} \times \frac{\text{Electricity}_{\text{baseline}} - \text{Electricity}_{\text{mitigated}}}{\text{Electricity}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for water use

Water_{mitigated} = Volume of water to be supplied from the mitigated (local or less energy-intensive) source

Provided by Applicant

Water_{baseline} = Total volume of water used (million gallons)

Provided by Applicant

Electricity_{mitigated} = Electricity required to distribute water for Project from mitigated (local or less-energy intensive) source

Electricity_{baseline} = Baseline electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the resulting wastewater) (kWh/million gallons)

Indoor Uses:

Northern California Average: 5,411 kWh/million gallons [1]

Southern California Average: 13,022 kWh/million gallons [1]

Outdoor Uses:

Northern California Average: 3,500 kWh/million gallons [1]

Southern California Average: 11,111 kWh/million gallons [1]

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

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Water Supply

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Assuming 100% of water is sourced locally: Indoor Uses: <ul style="list-style-type: none"> • 0-40% reduction for Northern and Central California • 11-64% reduction for Southern California Outdoor Uses: <ul style="list-style-type: none"> • 0-60% reduction for Northern and Central California • 12-75% reduction for Southern California
All other pollutants	Not Quantified ⁸⁶

Discussion:

Assume a Project is located in Southern California within the Chino Basin and has a total indoor water demand of 100 million gallons. Assume 70 million gallons will be sourced from a water district which obtains its water from the typical Southern California water sources. Therefore, for these 70 million gallons the baseline outdoor water electricity-intensity factor for Southern California is used. Assume that the Project Applicant chooses to mitigate the Project by sourcing the remaining 30 million gallons from the Chino Basin. The expected GHG emission reduction is then:

$$\text{GHG Emission Reduced} = \frac{30}{100} \times \frac{11,111 - 4,298}{11,111} = 0.18 \text{ or } 18\%$$

Assumptions:

Data based upon the following reference:

- [1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

⁸⁶ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

- [2]CEC. 2005. California's Water-Energy Relationship. Final Staff Report. CEC 700-2005-011-SF. Available online at: <http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF>
- [3]NRDC. 2004. Energy Down the Drain: The Hidden Costs of California's Water Supply. Prepared by NRDC and the Pacific Institute. Available online at: <http://www.nrdc.org/water/conservation/edrain/edrain.pdf>

Preferred Literature:

Electricity and CO₂ savings from using locally-sourced water or water from sources which require below-average electricity intensities for supply and conveyance (such as gravity-dominated systems or local groundwater basins that are not very deep) are determined by comparing to the emissions that would have occurred if the water had instead been conveyed from typical water sources for the region. According to the 2005 and 2006 CEC reports [1,2], the typical mix of water sources in Northern and Central California is the State Water Project, groundwater, and gravity-dominated systems such as Hetch Hetchy and the Mokelumne Aqueduct. The majority of water in Southern California is supplied by imports from the State Water Project and the Colorado River Aqueduct. Examples of mitigated electricity-intensity factors are shown in Table WSW-3.1 and are based on data provided in 2006 CEC [1], 2005 CEC [2], and 2004 NRDC [3]. GHG emissions are calculated by multiplying the amount of water (million gallons) by the electricity-use water factor (kWh per million gallons) by the carbon-intensity of the local utility (CO₂e per kWh). The GHG emissions reductions associated with this mitigation measure are associated with the difference between the baseline water electricity-intensity factor and the mitigated electricity-intensity factor.

Alternative Literature:

None

Other Literature Reviewed:

None



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Water Supply

**Table WSW-3.1
Energy Intensity of Water Use (kWh/MG) by Region**

REGION	WATER USE SEGMENT						
	Supply & Conveyance ¹	Treatment ¹	Distribution ¹	OUTDOOR TOTAL (NON-POTABLE) ²	Wastewater Treatment ¹	INDOOR TOTAL (POTABLE) ³	
Northern California	SWP to Bay Area surface water	111	1,272	4,533	1,911	6,444	
	Hetch Hetchy to Bay Area gravity dominated	0	1,272	1,383	1,911	3,294	
	Mokelumne Aqueduct to Bay Area gravity dominated	160	1,272	1,543	1,911	3,454	
Central California	SWP to Central Coast surface water	111	1,272	4,533	1,911	6,444	
	SWP to San Joaquin Valley surface water	111	1,272	2,893	1,911	4,804	
	San Joaquin River Basin & Central Coast ⁴ groundwater	896	1,272	2,279	1,911	4,190	
	Tulare Lake Basin ⁴ groundwater	537	1,272	1,920	1,911	3,831	
	Fresno and Kings Counties (Westlands WD) ⁴ groundwater	2,271	111	1,272	3,654	5,565	
Southern California	SWP to L.A. Basin surface water	111	1,272	9,708	1,911	11,619	
	Colorado River Aqueduct to L.A. Basin surface water	6,140	111	1,272	1,911	9,434	
	Chino Basin ⁵ groundwater	2,915	111	1,272	4,298	6,209	
	Los Angeles ⁴ groundwater	1,780	111	1,272	3,163	5,074	
	San Diego County (Sweetwater WD) ⁴ groundwater	1,433	111	1,272	2,816	4,727	
San Diego County (Yuima WD) ⁴	2,029	111	1,272	3,412	5,323		



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REGION	WATER USE SEGMENT					INDOOR TOTAL (POTABLE) ³
	Supply & Conveyance ¹	Treatment ¹	Distribution ¹	OUTDOOR TOTAL (NON-POTABLE) ²	Wastewater Treatment ¹	
State-wide	<i>groundwater</i>					
	Local / Intra-basin	120	111	1,272	1,503	1,911
	Groundwater	4.45 kWh / MG / foot of well depth	111	1,272	TBC	1,911
	Ocean Desalination	13,800	111	1,272	15,183	1,911
	Brackish Water Desalination	3,230	111	1,272	4,613	1,911
						17,094
						6,524

Abbreviations:

CEC - California Energy Commission
 kWh - kilowatt hour
 MG - million gallons
 NRDC - Natural Resources Defense Council
 SWP - State Water Project
 TBC - to be calculated based on well depth
 WD - Water District

Notes:

1. Treatment, Distribution, and Wastewater Treatment electricity-intensity factors from 2006 CEC. Supply & Conveyance electricity-intensity factors from 2006 CEC unless otherwise noted.
2. Outdoor (Non-Potable) electricity-intensity factor is the sum of the Supply & Conveyance, Treatment, Distribution, and Distribution electricity-intensity factors.
3. Indoor (Potable) electricity-intensity factor is the sum of the Supply & Conveyance, Treatment, Distribution, and Wastewater Treatment electricity-intensity factors.
4. Supply & Conveyance electricity-intensity factor from 2004 NRDC.
5. Supply & Conveyance electricity-intensity factor from 2005 CEC.

Sources:

CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available at: <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>
 CEC. 2005. California's Water-Energy Relationship. Final Staff Report. CEC 700-2005-011-SF. Available online at: <http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF>
 NRDC. 2004. Energy Down the Drain: The Hidden Costs of California's Water Supply. Prepared by NRDC and the Pacific Institute. Available online at: <http://www.nrdc.org/water/conservation/edrain/edrain.pdf>

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WUW-1

Water Use

4.2 Water Use

4.2.1 Install Low-Flow Water Fixtures

Range of Effectiveness: 20% of GHG emissions associated with indoor Residential water use; 17-31% of GHG emissions associated with Non-Residential indoor water use.

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Installing low-flow or high-efficiency water fixtures in buildings reduces water demand, energy demand, and associated indirect GHG emissions.

This measure describes how to calculate GHG savings from installing low-flow water toilets, urinals, showerheads, or faucets, or high-efficiency clothes washers and dishwashers in residential and commercial buildings. To take credit for this mitigation measure, the Project Applicant must know the total expected indoor water demand before and after installation of low-flow or high-efficiency water fixtures. If expected water demand after implementation of the mitigation measure is not known, it can be calculated based on the information provided below. Water flow rates presented here in Tables WUW-1.1 and WUW-1.3 are based on technical specifications in the California Code of Regulations Title 20 (Appliance Efficiency Regulations) [2], Title 24 (California Green Building Standards Code) [1] and ENERGY STAR [5-8]. Indoor water end-uses for residential and commercial buildings presented here in Tables WUW-1.1 and WUW-1.2 are based on data provided in a 2003 report by the Pacific Institute for Studies in Development, Environment, and Security [3]. This report incorporates data from the most comprehensive end-use survey available to date, the 1999 Residential End Uses of Water survey published by the American Water Works Association [4], as well as California-specific population, water, and appliance data. California-specific data includes local utility water use and market penetration rates of low-flow and high-efficiency water fixtures.

The baseline scenario document describes the method to calculate baseline GHG emissions. It provides average Northern and Southern California electricity-use water factors and assumes that all water is treated to potable standards.

The percent reduction in GHG emissions is calculated based on the baseline scenario water use and the percent reduction in indoor water use achieved from a Project Applicant's commitment to installing low-flow and high-efficiency water fixtures. Table WUW-1.4 lists the estimated percent reductions in GHG emissions by water fixture and land use. The sum of all percent reductions applicable to the Project gives the overall percent reduction in GHG emissions expected from this mitigation measure. The details of these calculations are described below.

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Measure Applicability:

- Indoor water use
- To meet CEQA enforcement requirements, the Project Applicant should only take credit for this mitigation measure if the clothes washers and dishwashers are supplied by the Project Applicant/builder.

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected indoor water demand, without installation of low-flow or high-efficiency fixtures (million gallons), AND
- Total expected indoor water demand, after installation of low-flow or high-efficiency fixtures (million gallons), OR
- Commitment to low-flow or high-efficiency water fixtures (toilets, showerheads, sink faucets, dishwashers, clothes washers, or all of the above)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

$$\text{GHG emissions} = \text{MT CO}_2\text{e}$$

$$\text{Water}_{\text{baseline}} = \text{Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)} \\ \text{Provided by Applicant}$$

$$\text{Electricity} = \text{Electricity required to supply, treat, and distribute water and the resulting wastewater (kWh/million gallons)} \\ \text{Northern California Average: 5,411 kWh/million gallons} \\ \text{Southern California Average: 13,022 kWh/million gallons}$$

$$\text{Utility} = \text{Carbon intensity of Local Utility (CO}_2\text{e/kWh)}$$

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption.

The Project Applicant can choose to compute the percent reduction in GHG emissions in one of three ways:

Method A

The Project Applicant can use Table WUW-1.4 to calculate the overall percent reduction in GHG emissions from committing to installing certain low-flow or high-efficiency water fixtures. The Project Applicant may commit to installing fixtures based on three

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standards: the California Green Building Standards Code (CGBSC) mandatory requirements, the CGBSC voluntary standards, or the ENERGY STAR standards. Table WUW-1.4 presents the percent reductions in GHG emissions for each of these three standards based on water fixture type (toilet, showerhead, clothes washer, etc) and land use type (residential, office, restaurant, etc). Note that in Table WUW-1.4, it is assumed that a Project Applicant commits to installing low-flow or high-efficiency fixtures for 100% of an end-use category (i.e. either 0% or 100% of toilets will be low-flow, either 0% or 100% of clothes washers will be high-efficiency, etc). The total percent reduction in GHG emissions expected from this mitigation measure is then simply the sum of all of the individual percent reductions:

$$\text{GHG emission reduction} = \sum \text{PercentReduction}_{\text{Fixture}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.

PercentReduction_{Fixture} = Percent reduction in GHG emissions from each individual water fixture (i.e. toilet, bathroom faucet, dishwasher, etc.)

Provided in Table WUW-1.4

Method B

If the Project Applicant can provide detailed and substantial evidence to support a calculation of Water_{mitigated}, then that value can be used to calculate the percent GHG emission reduction using the following equation:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{baseline}} - \text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.

Water_{baseline} = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)

Provided by Applicant

Water_{mitigated} = Total calculated indoor water demand, after installation of low-flow and high-efficiency fixtures (million gallons)

Provided by Applicant or calculated using equations below

As shown in this equation, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Method C

The Project Applicant may choose to install fixtures which exceed the requirements of the California Green Building Standards Code but have different flow rates than those

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specified in the Tables WUW-1.1 and WUW-1.3. To take credit for this mitigation measure, the Project Applicant would need to calculate the percent reduction in GHG emissions using the equations below. In these equations, it is assumed that a Project Applicant commits to installing low-flow or high-efficiency fixtures for 100% of an end-use category (i.e. either 0% or 100% of toilets will be low-flow, either 0% or 100% of clothes washers will be high-efficiency, etc). More complicated equations are necessary to account for less than 100% commitment in one or more end-use categories.

$$\text{Water}_{\text{mitigated}} = \sum \text{EndUseWater}_{\text{mitigated}}$$

End-Uses are toilets, urinals, showerheads, bathroom faucets, kitchen faucets, dishwashers, clothes washers, and leaks and other.

Where,

$$\text{EndUseWater}_{\text{mitigated}} = \text{EndUsePercentIndoor} \times \text{Water}_{\text{baseline}} \times \frac{\text{EndUseFlowRate}_{\text{mitigated}}}{\text{EndUseFlowRate}_{\text{unmitigated}}}$$

$\text{EndUsePercentIndoor}$ = % of Indoor Water Use for that end-use
 Provided in Table WUW-1.1 for Residential Buildings
 Provided in Table WUW-1.1 for Non-Residential Buildings

$\text{Water}_{\text{baseline}}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
 Provided by Applicant

$\text{EndUseFlowRate}_{\text{baseline}}$ = Baseline current California standard water flow rate for that end-use
 Provided in Table WUW-1.1 for Residential Buildings
 Provided in Table WUW-1.3 for Non-Residential Buildings

$\text{EndUseFlowRate}_{\text{mitigated}}$ = Mitigated water flow rate for that end use
 Provided by Applicant, supported by manufacturer specification or technical sheets

For the Leak, Other end use and all end-uses where the Project Applicant makes no commitment to installing low-flow or high-efficiency water fixtures,

$\text{EndUseFlowRate}_{\text{mitigated}} = \text{EndUseFlowRate}_{\text{unmitigated}}$, so then $\text{EndUseWater}_{\text{mitigated}} = \text{EndUsePercentIndoor} \times \text{Water}_{\text{baseline}}$.

Then the percent reduction in GHG emissions is calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{Water}_{\text{baseline}} - \text{Water}_{\text{mitigated}}}{\text{Water}_{\text{baseline}}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for indoor water use.



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Water Use

- $Water_{baseline}$ = Total expected indoor water demand, without installation of low-flow and high-efficiency fixtures (million gallons)
Provided by Applicant
- $Water_{mitigated}$ = Total calculated indoor water demand, after installation of low-flow and high-efficiency fixtures (million gallons)
Calculated by Applicant using equation above

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Estimated 20% reduction for residential buildings, assuming the Project Applicant commits to installing 100% of fixtures with the lowest flow rates presented in Table WUW-1.1. Estimated 17-31% reduction for non-residential buildings, assuming the Project Applicant commits to installing 100% of fixtures with the lowest flow rates presented in Table WUW-1.3.
All other pollutants	Not Quantified ⁸⁷

Discussion:

In this example, assume that a Project Applicant commits to installing the following:

For residences:

- 2010 CGBSC Mandatory Requirements for toilet, showerhead, bathroom faucet, and kitchen faucet
- ENERGY STAR residential standard dishwasher

For hotel:

- 2010 CGBSC Voluntary Standards for toilet, urinal, showerhead, bathroom faucet, and kitchen faucet
- ENERGY STAR top-loading clothes washer
- ENERGY STAR commercial dishwasher (high temp, under counter)

Using Method A, the following equation is employed:

$$\text{GHG emission reduction} = \sum \text{PercentReduction}_{\text{Fixture}}$$

⁸⁷ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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Water Use

From Table WUW-1.4, the percent reduction in GHG emissions associated with indoor water use is then:

For residences:

$$6.6\% + 4.4\% + 5.7\% + 3.3\% + 0.2\% = 20.2\%$$

For hotel:

$$13.8\% + 5.4\% + 1.2\% + 0.8\% + 1.9\% + 6.4\% + 1.5\% = 31.0\%$$

Assumptions:

Data based upon the following references:

- [1] CCR Title 24, Part 11. 2010. Draft California Green Building Standards Code. Available online at: <http://www.documents.dgs.ca.gov/bsc/documents/2010/Draft-2010-CALGreenCode.pdf>
- [2] CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605. Appliance Efficiency Regulations.
- [3] Gleick, P.H.; Haasz, D.; Henges-Jeck, C.; Srinivasan, V.; Cushing, K.K.; Mann, A. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California. Published by the Pacific Institute for Studies in Development, Environment, and Security. Full report available online at: http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf. Appendices available online at: http://www.pacinst.org/reports/urban_usage/appendices.htm
- [4] Mayer, P.W.; DeOreo, W.B.; Opitz, E.M.; Kiefer, J.C.; Davis, W.Y.; Dziegielewski, B.; Nelson, J.O. 1999. Residential End Uses of Water. Published by the American Water Works Association Research Foundation.
- [5] USEPA. ENERGY STAR: Clothes Washers Key Product Criteria. Available online at: http://www.energystar.gov/index.cfm?c=clotheswash.pr_crit_clothes_washers
- [6] USEPA. ENERGY STAR: Commercial Clothes Washers for Consumers. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CCW
- [7] USEPA. ENERGY STAR: Dishwashers Key Product Criteria. Available online at: http://www.energystar.gov/index.cfm?c=dishwash.pr_crit_dishwashers
- [8] USEPA. ENERGY STAR Commercial Dishwashers Savings Calculator. Available online at: http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COH

Preferred Literature:

Water

CEQA# MM-E23
MP# EE-2.1.6; COS 2.2

WUW-1

Water Use

For the baseline scenario, the California Green Building Standards Code [1] specifies baseline water flow rates for toilets, showerheads, urinals, bathroom faucets, and kitchen faucets. The California Appliance Efficiency Regulation (Title 20) [2] specifies baseline water flow rates for residential and commercial dishwashers and clothes washers. For the mitigated scenario, the 2010 CGBSC also specifies water flow rates for toilets, showerheads, urinals, bathroom faucets, and kitchen faucets which become mandatory in 2011, additional voluntary flow rates for these same fixtures, and voluntary flow rates for commercial dishwashers and clothes washers. In addition, ENERGY STAR-certified residential and commercial dishwashers and clothes washers have mitigated water flow rates [5-8].

Alternative Literature:

None

Other Literature Reviewed:

- [9] USEPA. Water Sense: Product Factsheets and Final Specifications. Available online at: <http://www.epa.gov/watersense/products/index.html>. Accessed February 2010.

USEPA WaterSense labeled products include toilets, bathroom sink faucets, and flushing urinals, and are certified to meet USEPA's standards for improved water efficiency. While WaterSense models do perform with greater water efficiency than federal standard models, they are not more efficient than the models required in California starting in 2011 due to the 2010 CGBSC. Furthermore, WaterSense models are compared to federal standard models and calculations would need to be adjusted to account for differences in California standards. USEPA reports that toilets, bathroom faucets, and showers account for 30%, 15%, and 17% of indoor household water use, respectively. USEPA reports that WaterSense toilets use 20% less water than the federal standard model, while WaterSense bathroom faucets use 30% less water. Federal standard showerheads use 2.5 gallons of water per minute while the WaterSense models use 2.0 gallons of water per minute, which is equivalent to the 2010 CGBSC Mandatory Requirement. Further, federal standard flushing urinal models use 1.0 gallons per flush, while WaterSense models uses 0.5 gallons per flush, which is equivalent to the 2010 CGBSC Mandatory Requirement.

**Table WUW-1.1
Reduction in Water use from Low-flow or High-efficiency Residential Water Fixtures**

Fixture	% of Indoor Water Use ¹	Water Flow Rate				Unit
		Baseline Current California Standard ²	Mitigated 2010 California Green Building Standards Code (Mandatory in 2011) ³	Mitigated 2010 California Green Building Standards Code (Voluntary) ⁴	Mitigated ENERGY STAR ⁵	
Toilet	33%	1.6	1.28	-	-	gallons/flush
Showerhead	22%	2.5	2.0	-	-	gallons/minute @ 60 psi
Bathroom Faucet	18%	2.2	1.5	-	-	gallons/minute @ 60 psi
Kitchen Faucet		2.2	1.8	-	-	gallons/minute @ 60 psi
Standard Dishwasher	1%	6.5	--	5.8	5.0	gallons/cycle
Compact Dishwasher		4.5	--	-	3.5	gallons/cycle
Top-loading Clothes Washer	14%	6.0	--	-	6.0	gallons/cycle/ cubic foot
Front-loading Clothes Washer		6.0	--	-	6.0	gallons/cycle/ cubic foot
Leaks, Other	12%	-	--	-	-	--

Notes:

1. Indoor household end use of water 2000 estimates from Figure 2-4c of the Pacific Institute report.
2. Baseline water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are from the 2010 California Green Building Standards Code. Baseline water flow rates for dishwashers and clothes washers are from CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605.2 (Appliance Efficiency Regulations for appliances sold in California).
3. Mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary in 2010 and mandatory starting January 1, 2011.
4. Mitigated water flow rates for dishwashers and clothes washers are voluntary.
5. In some cases, the 2011 ENERGY STAR dishwasher and clothes washer models have lower flow rates than the 2010 California Green Building Standards Code. Using these ENERGY STAR models results in an additional mitigation beyond what is recommended by the 2010 California Green Building Standards Code.

**Table WUW-1.2
Percent Indoor Water Use by End-Use in Non-Residential Buildings**

End-Use	OFFICE		HOTEL		RESTAURANT		GROCERY STORE		NON-GROCERY RETAIL STORES		K-12 SCHOOL		OTHER SCHOOL	
	Total ¹	Indoor ²	Total ¹	Indoor ²	Total ¹	Indoor ²	Total ¹	Indoor ²						
Restroom	26%	--	51%	--	34%	--	17%	--	26%	--	20%	--	20%	--
Toilets (72% of Restroom)	--	48%	--	46%	--	27%	--	26%	--	46%	--	51%	--	37%
Urinals (17% of Restroom)	--	11%	--	11%	--	6%	--	6%	--	11%	--	12%	--	9%
Faucets (4% of Restroom)	--	3%	--	3%	--	1%	--	1%	--	3%	--	3%	--	2%
Showers (7% of Restroom)	--	5%	--	4%	--	3%	--	2%	--	4%	--	5%	--	4%
Kitchen	3%	--	10%	--	46%	--	9%	--	4%	--	2%	--	1%	--
Faucets (57% of Kitchen)	--	4%	--	7%	--	29%	--	11%	--	6%	--	4%	--	1%
Dishwashers (24% of Kitchen)	--	2%	--	3%	--	12%	--	5%	--	2%	--	2%	--	1%
Ice Making (19% of Kitchen)	--	1%	--	2%	--	10%	--	4%	--	2%	--	1%	--	0%
Laundry	0%	0%	14%	18%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%
Other	10%	26%	5%	6%	12%	13%	22%	46%	11%	27%	6%	21%	17%	44%
Landscaping	38%	--	10%	--	6%	--	3%	--	38%	--	72%	--	61%	--
Cooling	23%	--	10%	--	2%	--	49%	--	21%	--	unknown	--	unknown	--
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:

1. Water end-use data from Figures E-1, E-2, E-5, E-6, E-7, E-8, and E-9 of Appendix E of the Pacific Institute report.
2. Indoor end-use data calculated based on the total water use data for the relevant building category and Figure 4-3 and Figure 4-4 of the Pacific Institute report. Figure 4-3 shows the breakdown of restroom water use by end-use in the commercial & industry sector. Figure 4-4 shows the breakdown of kitchen water use by end-use in the commercial & industry sector; it was assumed that all end-uses except dishwashing and ice making are associated with faucet water use.

**Table WUW-1.3
Reduction in Water use from Low-flow or High-efficiency Non-Residential Water Fixtures**

Fixture	Water Flow Rate				Unit
	Baseline Current California Standard ¹	Mitigated 2010 California Green Building Standards Code (Mandatory in 2011) ²	Mitigated 2010 California Green Building Standards Code (Voluntary) ³	Mitigated ENERGY STAR ⁴	
Toilet	1.6	1.28	1.12	-	gallons/flush
Urinal	1.0	0.5	0.5	-	gallons/flush
Showerhead	2.5	2.0	1.8	-	gallons/minute @ 60 psi
Bathroom Faucet	0.5	0.4	0.35	-	gallons/minute @ 60 psi
Kitchen Faucet	2.2	1.8	1.6	-	gallons/minute @ 60 psi
Dishwasher: High Temp, Under Counter	1.98	-	0.90	1.00	gallons/rack
Dishwasher: High Temp, Door	1.44	-	0.95	0.95	gallons/rack
Dishwasher: High Temp, Single Tank Conveyor	1.13	-	0.70	0.70	gallons/rack
Dishwasher: High Temp, Multi Tank Conveyor	1.10	-	0.70	0.54	gallons/rack
Dishwasher: Low Temp, Under Counter	1.95	-	0.98	1.70	gallons/rack
Dishwasher: Low Temp, Door	1.85	-	1.16	1.18	gallons/rack
Dishwasher: Low Temp, Single Tank Conveyor	1.23	-	0.62	0.79	gallons/rack
Dishwasher: Low Temp, Multi Tank Conveyor	0.99	-	0.62	0.54	gallons/rack
Top-loading Clothes Washer	9.5	-	8.6	6.0	gallons/cycle/ cubic foot
Front-loading Clothes Washer	9.5	-	8.6	6.0	gallons/cycle/ cubic foot



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Water Use

Notes:

1. Baseline water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are from the 2010 California Green Building Standards Code. Baseline water flow rates for dishwashers are from the ENERGY STAR Commercial Dishwasher Calculator. Baseline water flow rates for clothes washers are from CCR Title 20, Division 2, Chapter 4, Article 4, Section 1605.2 (Appliance Efficiency Regulations for appliances sold in California).
2. These mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary in 2010 and mandatory starting January 1, 2011.
3. These mitigated water flow rates for toilets, showerheads, bathroom faucets, and kitchen faucets are voluntary and represent the maximum recommended flow rate in order to achieve an overall 30% reduction in water use. Mitigated water flow rates for dishwashers and clothes washers are also voluntary. The range of values shown here represents different types of commercial dishwashers (high-temperature or chemical; conveyor, door, or undercounter models). See Appendix A5 of the 2010 California Green Building Standards Code for details.
4. In some cases, the ENERGY STAR dishwasher and clothes washer models have lower flow rates than the 2010 California Green Building Standards Code. Using these ENERGY STAR models results in an additional mitigation beyond what is recommended by the 2010 California Green Building Standards Code. See the following ENERGY STAR website for details: http://www.energystar.gov/index.cfm?c=comm_dishwashers.pr_crit_comm_dishwashers

Table WUW-1.4
Percent Reductions in GHG emissions from Installing Low-Flow or High-Efficiency Water Fixtures

FIXTURE	LAND USE									
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL		
2010 California Green Building Standards Code (Mandatory Requirements starting in 2011):										
Toilet	6.6%	9.6%	9.2%	5.3%	5.1%	9.1%	10.3%	7.4%		
Urinal	N/A	5.7%	5.4%	3.1%	3.0%	5.4%	6.1%	4.4%		
Showerhead	4.4%	0.9%	0.9%	0.5%	0.5%	0.9%	1.0%	0.7%		
Bathroom Faucet	5.7%	0.5%	0.5%	0.3%	0.3%	0.5%	0.6%	0.4%		
Kitchen Faucet	3.3%	0.8%	1.3%	5.2%	1.9%	1.0%	0.7%	0.3%		
2010 California Green Building Standards Code (Voluntary Standards):										
Toilet	N/A	14.4%	13.8%	8.0%	7.7%	13.7%	15.4%	11.1%		
Urinal	N/A	5.7%	5.4%	3.1%	3.0%	5.4%	6.1%	4.4%		
Showerhead	N/A	1.3%	1.2%	0.7%	0.7%	1.2%	1.4%	1.0%		
Bathroom Faucet	N/A	0.8%	0.8%	0.4%	0.4%	0.8%	0.9%	0.6%		
Kitchen Faucet	N/A	1.2%	1.9%	7.8%	2.9%	1.5%	1.1%	0.4%		
Top-Loading Clothes Washer	N/A	N/A	1.8%	N/A	N/A	N/A	N/A	0.3%		



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FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Front-Loading Clothes Washer	N/A	N/A	1.8%	N/A	N/A	N/A	N/A	0.3%
Residential Standard Dishwasher	0.1%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential Compact Dishwasher	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Dishwasher: High Temp, Under Counter	N/A	1.0%	1.6%	6.5%	2.5%	1.3%	0.9%	0.3%
Commercial Dishwasher: High Temp, Door	N/A	0.6%	1.0%	4.1%	1.5%	0.8%	0.6%	0.2%
Commercial Dishwasher: High Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.6%	1.7%	0.9%	0.7%	0.2%
Commercial Dishwasher: High Temp, Multi Tank Conveyor	N/A	0.7%	1.1%	4.4%	1.6%	0.9%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Under Counter	N/A	0.9%	1.5%	6.0%	2.2%	1.2%	0.9%	0.3%
Commercial Dishwasher: Low Temp, Door	N/A	0.7%	1.1%	4.5%	1.7%	0.9%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Single Tank Conveyor	N/A	0.9%	1.5%	6.0%	2.2%	1.2%	0.9%	0.3%

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Commercial Dishwasher: Low Temp, Multi Tank Conveyor	N/A	0.7%	1.1%	4.5%	1.7%	0.9%	0.6%	0.2%
ENERGY STAR Standards:								
Top-Loading Clothes Washer	N/A	N/A	6.4%	N/A	N/A	N/A	N/A	0.9%
Front-Loading Clothes Washer	N/A	N/A	6.4%	N/A	N/A	N/A	N/A	0.9%
Residential Standard Dishwasher	0.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential Compact Dishwasher	0.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Commercial Dishwasher: High Temp, Under Counter	N/A	0.9%	1.5%	5.9%	2.2%	1.2%	0.8%	0.3%
Commercial Dishwasher: High Temp, Door	N/A	0.6%	1.0%	4.1%	1.5%	0.8%	0.6%	0.2%
Commercial Dishwasher: High Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.6%	1.7%	0.9%	0.7%	0.2%
Commercial Dishwasher: High Temp, Multi Tank Conveyor	N/A	0.9%	1.5%	6.1%	2.3%	1.2%	0.9%	0.3%
Commercial Dishwasher: Low Temp, Under Counter	N/A	0.2%	0.4%	1.5%	0.6%	0.3%	0.2%	0.1%

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Water Use

FIXTURE	LAND USE							
	RESIDENTIAL	OFFICE	HOTEL	RESTAURANT	GROCERY STORE	NON-GROCERY RETAIL STORE	K-12 SCHOOL	OTHER SCHOOL
Commercial Dishwasher: Low Temp, Door	N/A	0.7%	1.1%	4.3%	1.6%	0.8%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Single Tank Conveyor	N/A	0.7%	1.1%	4.3%	1.6%	0.8%	0.6%	0.2%
Commercial Dishwasher: Low Temp, Multi Tank Conveyor	N/A	0.8%	1.4%	5.5%	2.0%	1.1%	0.8%	0.3%

Notes:

N/A indicates that either (a) an improved standard does not exist, or (b) the percent of indoor water use for that fixture and land use is typically zero. For example, (a) the ENERGY STAR standard for residential clothes washers is the same as the baseline current California standard, and (b) no water is expected to be used for laundry (clothes washers) in the Office land use.

Water

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WUW-2

Water Use

4.2.2 Adopt a Water Conservation Strategy

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. It is equal to the Percent Reduction in water commitment.

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Reducing water use reduces energy demand and associated indirect GHG emissions.

This mitigation measure describes how to calculate GHG emissions reductions from a Water Conservation Strategy which achieves X% reduction in water use (where X% is the specific percentage reduction in water use committed to by the Project Applicant). The steps taken to achieve this X% reduction in water use can vary in nature and may incorporate technologies which have not yet been established at the time this document was written. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting the percent reduction in water use.

The expected percent reduction is applied to the baseline water use, calculated according to the baseline methodology document. The energy-intensity factor associated with water conveyance, treatment, and distribution is provided in the 2006 CEC report [1].

This measure may incorporate other mitigation measures (WUW-1 through 6) of this document. As such, if this measure is used, the other measures cannot be used. These measures can be consulted to assist in determining methods of quantification and typical ranges of effectiveness.

Measure Applicability:

- Indoor and/or Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected water demand, without implementation of Water Conservation Strategy (million gallons)
- Percent reduction in water use after implementation of Water Conservation Strategy (%)

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

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WUW-2

Water Use

Where:

GHG emissions = MT CO₂e

Water_{baseline} = Total expected water demand, without implementation of Water Conservation Strategy (million gallons)
Provided by Applicant

Electricity = Electricity required to supply, treat, and distribute water (and for indoor uses, the electricity required to treat the wastewater) (kWh/million gallons)
Northern California Avg (outdoor uses): 3,500 kWh/million gallons [1]
Northern California Avg (indoor uses): 5,411 kWh/million gallons [1]
Southern California Avg (outdoor uses): 11,111 kWh/million gallons [1]
Southern California Avg (indoor uses): 13,022 kWh/million gallons [1]

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

If there are percent reductions associated with both indoor and outdoor water use, the GHG emissions from indoor and outdoor water use should be calculated separately and then summed. Thus,

$$\text{Total GHG emissions} = \text{GHG emissions}_{\text{indoor}} + \text{GHG emissions}_{\text{outdoor}}$$

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for water use.

PercentReduction = Expected percent reduction in water use after implementation of Water Conservation Strategy (%)
Provided by Applicant

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	To be determined by Applicant

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Water Use

All other
pollutants

Not Quantified⁸⁸

Discussion:

The percent reduction in GHG emissions is equivalent to the percent reduction in indoor and outdoor water usage. Therefore, if a Project Applicant implements a Water Conservation Strategy which achieves a 10% reduction in water use, the GHG emissions associated with water use are reduced by 10%.

Assumptions:

Data based upon the following reference:

- [1] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

Preferred Literature:

2006 CEC report

Alternative Literature:

None

Other Literature Reviewed:

None

⁸⁸ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

4.2.3 Design Water-Efficient Landscapes

Range of Effectiveness: 0 – 70% reduction in GHG emissions from outdoor water use

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Designing water-efficient landscapes for a project site reduces water consumption and the associated indirect GHG emissions. Examples of measures which a Project Applicant should consider when designing landscapes are reducing lawn sizes, planting vegetation with minimal water needs such as California native species, choosing vegetation appropriate for the climate of the project site, and choosing complimentary plants with similar water needs or which can provide each other with shade and/or water.

This measure describes how to calculate GHG savings from residential and commercial landscape plantings which have decreased watering demands compared to standard California landscape plantings. The methodology for calculating water demand presented here is based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance [1] and the CDWR 2000 report: "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III" ("WUCOLS") [2].

By January 1, 2010, all local water agencies were required to adopt the CDWR Model Water Efficient Landscape Ordinance or develop their own local ordinance which is at least as effective at conserving water as the Model Ordinance. Some local agencies have published or are in the process of developing local ordinances.⁸⁹ A Project Applicant may choose to use the methodology presented in a local ordinance to demonstrate a percent reduction in water use and GHG emissions; however, the calculations will be similar to the methodology presented in the CDWR Model Ordinance and re-described here.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

⁸⁹ List of local water agencies and a description of their plans to either adopt the CDWR Model Ordinance or develop their own ordinance: <ftp://ftp.water.ca.gov/Model-Water-Efficient-Landscape-Ordinance/Local-Ordinances/>

Water

MP# COS-2.1

WUW-3

Water Use

- $Water_{baseline}$, to be calculated by the Project Applicant using the methodology described below
- $Water_{mitigated}$, to be calculated by the Project Applicant using the methodology described below

Baseline Method:

The Project's baseline water use is the Maximum Applied Water Allowance (MAWA) described in the Model Water Efficient Landscape Ordinance:

$$MAWA = ET_0 \times 0.62 \times [(0.7 \times LA) + (0.3 \times SLA)]$$

Where:

MAWA	=	Maximum Applied Water Allowance (gallons per year)
ET_0	=	Annual Reference Evapotranspiration ⁹⁰ from Appendix A of the Model Water Efficient Landscape Ordinance (inches per year)
0.7	=	ET Adjustment Factor (ETAF)
LA	=	Landscape Area ⁹¹ includes Special Landscape Area ⁹² (square feet)
0.62	=	Conversion factor (to gallons per square foot)
SLA	=	Portion of the landscape area identified as Special Landscape Area (square feet)
0.3	=	the additional ET Adjustment Factor for Special Landscape Area

Then the baseline GHG emissions are calculated as follows:

$$GHG \text{ emissions} = MAWA \times Electricity \times Utility$$

Where:

GHG emissions	=	MT CO ₂ e
Electricity	=	Electricity required to supply, treat, and distribute water (kWh/million gallons)
		Northern California Average (outdoor uses): 3,500 kWh/million gallons
		Southern California Average (outdoor uses): 11,111 kWh/million gallons

⁹⁰ Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website:

<http://www.cimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19>

⁹¹ § 491 Definitions in Model Water Efficient Landscape Ordinance: "Landscape Area (LA) means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designed for non-development (e.g., open spaces and existing native vegetation)."

⁹² § 491 Definitions in Model Water Efficient Landscape Ordinance: "Special Landscape Area (SLA) means an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface."

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WUW-3

Water Use

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption.

The Project's mitigated water use is the Estimated Total Water Use (ETWU) described in the Model Water Efficient Landscape Ordinance:

$$ETWU = ET_0 \times 0.62 \times \left(\frac{PF \times HA}{IE} + SLA \right)$$

Where:

- ETWU = Estimated total water use (gallons per year)
- ET₀ = Annual Reference Evapotranspiration from Appendix A of the Model Water Efficient Landscape Ordinance (inches per year)
- PF = Plant Factor from WUCOLS⁹³
see Table WUW-3.1 for examples and WUCOLS for a complete list of values
- HA = Hydrozone Area⁹⁴ (square feet)
- SLA = Special Landscape Area (square feet)
- 0.62 = Conversion factor (to gallons per square foot)
- IE = Irrigation Efficiency⁹⁵ (minimum 0.71)

Then the percent reduction in GHG emissions is calculated as follows:

$$\text{GHG emission reduction} = \frac{\text{MAWA} - \text{ETWU}}{\text{MAWA}}$$

⁹³ § 491 Definitions in Model Water Efficient Landscape Ordinance: "Plant Factor (PF)" is a factor, when multiplied by ET₀, estimates the amount of water needed by plants." The Model Water Efficient Landscape Ordinance indicates that PF is 0-0.3 for low water use plants, 0.4-0.6 for moderate water use plants, and 0.7-1.0 for high water use plants. PF is equivalent to the "species factor" (k_s) in WUCOLS. See Table A above for examples of low, moderate, and high water use plants from WUCOLS. For a complete list of PF (k_s) values, see the species evaluation list in WUCOLS.

⁹⁴ § 491 Definitions in Model Water Efficient Landscape Ordinance: "Hydrozone means a portion of the landscaped area having plants with similar water needs. A hydrozone may be irrigated or non-irrigated."

⁹⁵ § 491 Definitions in Model Water Efficient Landscape Ordinance: "Irrigation Efficiency (IE) means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum average irrigation efficiency for purposes of the ordinance is 0.71. Greater irrigation efficiency can be expected from well designed and maintained systems."



Water

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WUW-3

Water Use

As shown in this equation, the regional electricity intensity factor and utility carbon intensity factor do not play a role in determining the percentage reduction in GHG emissions. Furthermore, since ET_0 is a multiplier in both MAWA and ETWU, it cancels out and therefore ET_0 does not play a role in determining the percentage reduction in GHG emissions either.

Table WUW-3.1: Example Plant Factor (PF) Values from WUCOLS

Water Needs	PF Range	Plant Type	Species Examples
Low	0 - 0.3	tree	Quercus agrifolia (coast live oak)
			Yucca
			Pinus halepensis (Aleppo pine)
		shrub	Quercus berberidifolia (California scrub oak)
			Lonicera subspicata (chaparral honeysuckle)
			Salvia apiana (white sage)
		vine	Macfadyena unguis-cati (cat's claw)
		groundcover	Arctostaphylos spp. (manzanita)
perennial	Monardella villosa (coyote mint)		
Moderate	0.4 - 0.6	tree	Acer negundo (California box elder)
			Acer paxii (evergreen maple)
		shrub	Buxus microphylla japonica (Japanese boxwood)
		vine	Wisteria
		Aristolochia durior (Dutchman's pipe)	
	groundcover	Ceratostigma plumbaginoides (dwarf plumbago)	
	perennial	Monarda didyma (bee balm)	
	0.6	turf grasses (warm season)	Bermudagrass
			kikuyugrass
			seashore paspalum
St. Augustinegrass			
zoysiagrass			
High	0.7 - 1.0	tree	Betula pendula (European white birch)
			Betula nigra (river/red birch)
		shrub	Cyathea cooperii (Australian tree fern)
			Cornus stolonifera (red osier dogwood)
		groundcover	Soleirolia soleirolii (baby's tears)
		perennial	Mimulus spp., herbaceous (monkey flower)
			Woodwardia radicans (European chain fern)
	Acorus gramineus (sweet flag)		
	0.8	turf grasses (cool season)	annual bluegrass
			annual ryegrass
			colonial bentgrass
			creeping bentgrass
			hard fescue
			highland bentgrass
			Kentucky bluegrass
meadow fescue			
perennial ryegrass			
red fescue			
rough-stalked bluegrass			
tall fescue			

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Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Assuming an irrigation efficiency of 71% as specified in the Model Water Efficient Landscape Ordinance and no Special Landscape Area: <ul style="list-style-type: none"> • 0% reduction if 100% of vegetation is Moderate PF • 13% reduction if 40% of vegetation is Low PF, 40% is Moderate PF, and 20% is High PF • 35% reduction if 50% of vegetation is Low PF and 50% is Moderate PF • 70% reduction if 100% of vegetation is Low PF
All other pollutants	Not Quantified ⁹⁶

Discussion:

Example calculations of MAWA and ETWU are provided in the Model Water Efficient Landscape Ordinance. In this example, assume that the Project Applicant has used the equations to calculate MAWA = 100 million gallons and ETWU = 80 million gallons. Then the GHG emissions reduction is 20%:

$$\text{GHG Emission Reduced} = \frac{100 - 80}{100} = 0.2 \text{ or } 20\%$$

Assumptions:

Data based upon the following references:

- [1] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: <http://www.water.ca.gov/wateruseefficiency/docs/MWEL09-10-09.pdf>
- [2] ("WUCOLS"): California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california_wucols/wucols00.pdf
- [3] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at: <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

Preferred Literature:

The California Department of Water Resources Model Water Efficient Landscape Ordinance requires that the Estimated Total Water Use (ETWU) of certain landscape

⁹⁶ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.



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Water Use

projects shall not exceed the Maximum Applied Water Allowance (MAWA) for that landscape area. The MAWA is calculated based on average irrigation efficiencies and plant factors, two major influences on the water demand of a landscape. The ETWU is calculated based on project-specific plant factors and irrigation efficiency.

Alternative Literature:

- [4] ("WUCOLS"): California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california_wucols/wucols00.pdf
- [5] The Las Pilitas Nursery website has a user-friendly and searchable database of native California plants: <http://www.laspilitas.com/shop/plant-products>. As shown in WUCOLS, many California native plants have minimal or very low water needs.

The equation on page 9 of WUCOLS [4] shows that water demand for irrigation landscape plantings (ETL, landscape evapotranspiration) is calculated by multiplying two parameters: the landscape coefficient (KL) and the reference evapotranspiration (ETo). KL values are based on a species factor, density factor, and microclimate factor. The guidance provides detailed instructions on how to assign project-specific values for these three factors. KL can then be divided by the irrigation efficiency to obtain the Total Water Applied, as shown on page 31 of the guidance [4]. Total Water Applied is analogous to ETWU in the methodology shown above. Thus, the detailed WUCOLS methodology could be used to perform a more rigorous calculation of ETWU which incorporates microclimate effects (e.g. windy areas, areas shaded by buildings, etc) and vegetation density effects.

Other Literature Reviewed:

None

Water

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WUW-4

Water Use

4.2.4 Use Water-Efficient Landscape Irrigation Systems

Range of Effectiveness: 6.1% reduction in GHG emissions from outdoor water

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Using water-efficient landscape irrigation techniques such as “smart” irrigation technology reduces outdoor water demand, energy demand, and the associated GHG emissions.⁹⁷

“Smart” irrigation control systems use weather, climate, and/or soil moisture data to automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. Thus, the appropriate amount of moisture for a certain vegetation type is maintained, and excessive watering is avoided. Many companies which design and install smart irrigation systems, such as Calsense, ET Water, and EPA-certified WaterSense Irrigation Partners, may be able to provide a site-specific estimate of the percent reduction in outdoor water use that can be expected from installing a smart irrigation system. Expected reductions are in the range of 1 – 30%, with the high end of the range associated with historically high water users. To take credit for the high end of the GHG emissions reductions based on these company quotes, the Project Applicant would need to provide detailed and substantial evidence supporting the proposed percent reduction in water use. Alternatively, the Project Applicant could apply the average percent reduction reported in a 2009 study conducted by Aquacraft, Inc. in cooperation with the California Department of Water Resources, the California Urban Water Conservation Council, and a consortium of California water utilities. This comprehensive study showed that smart irrigation systems of various brands achieve an average of 6.1% reduction in outdoor water use in California. This percent reduction is based on a two year study (one year pre and post installation of smart controllers) of over two thousand sites in seventeen different water utilities throughout northern and southern California. While the study also presents utility-specific percent reductions, variations in implementation and sample size between utilities renders these percent reductions insufficient for characterization in a mitigation measure at this time. The study also notes that for a sample of smart controllers where data was collected for three years after installation, the percent reduction in water use increased with time, with the greatest percent reduction achieved in year three.

⁹⁷ The installation of smart irrigation controllers will be required starting in 2011 as indicated in the 2010 Draft California Green Building Standards Code. As technology advances and newer generation smart irrigation controllers become available, the Project Applicant may choose to use this mitigation measure to quantify water use and associated GHG reductions beyond what would be achieved with the standards required by the California Green Building Standards Code.

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WUW-4

Water Use

The expected percent reduction is applied to the baseline water use, calculated according to the baseline methodology document. The energy-intensity factor associated with water conveyance and distribution is provided in the 2006 CEC report [2].

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Total expected outdoor water demand, without installation of smart landscape irrigation controller (million gallons).
- (Optional) Project-specific percent reduction in outdoor water demand, after installation of smart landscape irrigation controller. Percent reduction must be verifiable. Otherwise, use the default value of 6.1%.

Baseline Method:

$$\text{GHG emissions} = \text{Water}_{\text{baseline}} \times \text{Electricity} \times \text{Utility}$$

Where:

$$\text{GHG emissions} = \text{MT CO}_2\text{e}$$

$$\text{Water}_{\text{baseline}} = \text{Total expected outdoor water demand, without installation of smart landscape irrigation controllers (million gallons)} \\ \text{Provided by Applicant}$$

$$\text{Electricity} = \text{Electricity required to supply, treat, and distribute water (kWh/million gallons)} \\ \text{Northern California Average: 3,500 kWh/million gallons} \\ \text{Southern California Average: 11,111 kWh/million gallons}$$

$$\text{Utility} = \text{Carbon intensity of Local Utility (CO}_2\text{e/kWh)}$$

Mitigation Method:

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction} \times \text{Water}_{\text{baseline}}$$

Where:

$$\text{GHG emission reduction} = \text{Percentage reduction in GHG emissions for outdoor water use.}$$

$$\text{Water}_{\text{baseline}} = \text{Total expected outdoor water demand, without installation of smart landscape irrigation controllers (million gallons)}$$

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Water Use

Provided by Applicant

PercentReduction = Expected percent reduction in water use after installation of smart landscape irrigation controllers (%)

Provided by Applicant or use default 6.1%

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	6.1% unless project-specific data is provided
All other pollutants	Not Quantified ⁹⁸

Discussion:

The percent reduction in GHG emissions is equivalent to the percent reduction in outdoor water usage. Therefore, if a Project Applicant uses the default percent reduction in water usage associated with installing smart landscape irrigation control systems (6.1%), the resulting reduction in GHG emissions is also 6.1%.

Assumptions:

Data based upon the following references:

- [1] "Evaluation of California Weather-Based "Smart" Irrigation Controller Programs." July 2009. Presented to the California Department of Water Resources by The Metropolitan Water District of Southern California and The East Bay Municipal Utility District. Facilitated by the California Urban Water Conservation Council. Prepared by Aquacraft Inc., National Research Center Inc., and Dr. Peter J. Bickel. Available online at: http://www.aquacraft.com/Download_Reports/Evaluation_of_California_Smart_Controller_Programs_-_Final_Report.pdf
- [2] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. Available online at: <http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

Preferred Literature:

As described above, the 2009 study [1] conducted by Aquacraft, Inc. in cooperation with the California Department of Water Resources, the California Urban Water Conservation Council, and a consortium of California water utilities showed that smart

⁹⁸ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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Water Use

irrigation systems of various brands achieve an average of 6.1% reduction in outdoor water use in California.

Alternative Literature:

When common watering systems such as in-ground sprinklers are used, much of the water applied to lawns and landscapes is not absorbed by the vegetation. Instead, it is lost through runoff or evaporation. The USEPA reports that a study by the American Water Works Association found that households with in-ground sprinkler systems used 35% more water outdoors than households without these systems, while households with drip irrigation systems used 16% more water [3]. The USEPA reports that hand-held hoses or sprinklers are often more water efficient than automatic irrigation systems.

However, “smart” automatic landscape irrigation systems do exist. Examples include systems which automatically adjust watering schedules in response to environmental and climate changes, such as changes in temperature or precipitation levels. A few references have quantified reductions from this type of irrigation strategy. The Southern Nevada Water Authority reports that smart irrigation systems can reduce outdoor water use by an average of 15 to 30 percent, depending on the system, landscape type, and location [4]. One study conducted in 40 households with historically high water use in Irvine, California showed an average reduction in outdoor water use of 16% [5,6]. Another study conducted in Santa Barbara, California households with historically high water use showed an average water savings of 26% [5,7]. A Project Applicant could also hire an EPA-certified WaterSense Irrigation Partner to design and install a new irrigation system or audit an existing system in an effort to minimize the amount of water consumed [6].

- [3] USEPA. 2002. Water-Efficient Landscaping: Preventing Pollution & Using Resources Wisely. Available online at:
<http://www.epa.gov/npdes/pubs/waterefficiency.pdf>
- [4] Southern Nevada Water Authority. Smart Irrigation Controllers. Available online at:
http://www.snwa.com/html/land_irrig_smartclocks.html. Accessed March 2010.
- [5] Irrigation Association. Smart Controller Efficiency Testing. Available online at:
<http://www.irrigation.org/SWAT/Industry/case-studies.asp>. Accessed March 2010.
- [6] Irvine Ranch Water District, et al. 2001. Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine “ET Controller” Study. Available online at:
<http://www.irrigation.org/swat/images/irvine.pdf>
- [7] Santa Barbara County Water Agency, et al. 2003. Santa Barbara County ET Controller Distribution and Installation Program Final Report. Available online at:
http://www.irrigation.org/swat/images/santa_barbara.pdf
- [8] USEPA. WaterSense: Landscape Irrigation. Available online at:
http://www.epa.gov/WaterSense/services/landscape_irrigation.html

Water

WUW-5

Water Use

4.2.5 Reduce Turf in Landscapes and Lawns

Range of Effectiveness: Varies and is equal to the percent commitment to turf reduction, assuming no other outdoor water uses

Measure Description:

Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Turf grass (i.e. lawn grass) has relatively high water needs compared to most other types of vegetation. For example, trees planted in turf generally do not need additional watering besides what is required for the turf. Water agencies in Southern California have instituted turf removal programs which provide rebates for resident who reduce the turf area in their lawns. Reducing the turf size of landscapes and lawns reduces water consumption and the associated indirect GHG emissions.⁹⁹

This measure describes how to calculate GHG savings from reducing the turf area of an existing lawn by X square feet, or designing a lawn to have X square feet less than the turf area of a standard lawn at the project location.¹⁰⁰

Additional GHG emissions reductions may occur due to a reduction in fertilizer usage. Since this will vary based on individual occupant behavior, this reduction in GHG emissions from decreased fertilizer usage is not quantified.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Turf area of existing lawn or standard lawn at the project location (square feet)
- Turf area reduction commitment (square feet reduced or percent of baseline reduced)

Baseline Method:

⁹⁹ See the SoCal WaterSmart Residential Turf Program description at http://socialwatersmart.com/index.php?option=com_content&view=article&id=77&Itemid=10. Accessed March 2010.

¹⁰⁰ The Project Applicant would need to provide a value for and evidence supporting this "standard-sized lawn." This value is likely to vary greatly depending on the type of building (single-family, condo, apartment complex, commercial space) as well as location (region in California, urban or suburban).

Water

WUW-5

Water Use

The methodology for calculating water demand presented here is based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance [1] and the CDWR 2000 report: "A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III" [2].

The Project Applicant should first calculate the amount of water required to support the existing turf or standard-sized turf ($Water_{baseline}$).¹⁰¹ In the equations below, "crop" also represents "turf grass," or lawn grasses.

$$ET_C = K_C \times ET_0$$

Where:

ET_C = Crop Evapotranspiration, the total amount of water the baseline turf loses during a specific time period due to evapotranspiration¹⁰² (inches water/day)

K_C = Crop Coefficient, factor determined from field research, which compares the amount of water lost by the crop (e.g. turf) to the amount of water lost by a reference crop (unitless)

Species-specific; provided in Table WUW-5.1 below

ET_0 = Reference Evapotranspiration, the amount of water lost by a reference crop (inches water/day)

Region-specific; provided in Appendix A of the CDWR Model Water Efficient Landscape Ordinance [1]

¹⁰¹ Page 10 of the CDWR report explains that the objective of landscape management is to maintain the "health, appearance, and reasonable growth" of plants, and not necessarily to replenish all of the water lost at maximum evapotranspiration rates. Thus, the CDWR methodology presented here calculates only the amount of water required to sustain the health, appearance, and growth of the plants.

¹⁰² Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website:

<http://www.cimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19>

**Table WUW-5.1:
Crop Coefficient for Turf Grasses**

Category	Kc	Species
cool season grasses	0.8	annual bluegrass annual ryegrass colonial bentgrass creeping bentgrass hard fescue highland bentgrass Kentucky bluegrass meadow fescue perennial ryegrass red fescue rough-stalked bluegrass tall fescue
warm season grasses	0.6	Bermudagrass kikuyugrass seashore paspalum St. Augustinegrass zoysiagrass

Reference: p. 6 and p. 137 of CDWS report

Then: $Water_{baseline} = ETC \times Area_{baseline} \times 0.62 \times 365$

Where:

$Water_{baseline}$ = Volume of water required to support the baseline turf (gallons/year)

$Area_{baseline}$ = Area of existing or standard turf (square feet)

Provided by the Applicant

0.62 = conversion factor (gallons/squarefoot inches water)

365 = conversion factor (days/year)

ETC = Crop evapotranspiration

Calculated using the equation on page 280

Then the baseline GHG emissions are calculated as follows:

$GHG\ emissions = Water_{baseline} \times Electricity \times Utility$

Where:

GHG emissions = MT CO₂e

Electricity = Electricity required to supply, treat, and distribute water (kWh/million gallons)

Water

WUW-5

Water Use

Northern California Average (outdoor uses): 3,500 kWh/million gallons
 Southern California Average (outdoor uses): 11,111 kWh/million gallons
 Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Mitigation Method:

The equations above show that the GHG emissions are directly proportional to the water demand, which is in turn directly proportional to the area of the turf. Therefore, only the area of the existing or standard turf and the commitment to turf area reduction (square feet reduced or percent of baseline reduced) are needed to calculate the percent reduction in GHG emissions:

$$\text{GHG emission reduction} = \frac{\text{Area}_{\text{reduction}}}{\text{Area}_{\text{baseline}}} = \text{AreaPercentReduction}$$

Where:

Area_{reduction} = Area of turf to be reduced (square feet)
 Provided by the Applicant

Area_{baseline} = Area of existing or standard turf (square feet)
 Provided by the Applicant

AreaPercentReduction = Percent reduction in turf area (%)
 Provided by the Applicant

As shown in this equation, the regional electricity intensity factor for water and the utility carbon intensity factor do not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Up to 100%, assuming 100% reduction in turf grass area. This would be the case for rock-lawns, for example.
All other pollutants	Not Quantified ¹⁰³

Discussion:

In this example, assume that the Project Applicant has provided detailed evidence to show that the turf area of a standard lawn at the project location is 8,000 square feet. If the Project Applicant then commits to reducing the turf area of lawns by 3,000 square feet, then the GHG emissions reduction is 37.5%.

¹⁰³ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Water

WUW-5

Water Use

$$\text{GHG Emission Reduced} = \frac{3,000}{8,000} = 0.375 \text{ or } 37.5\%$$

Assumptions:

Data based upon the following references:

- [1] California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at:
<http://www.water.ca.gov/wateruseefficiency/docs/MWEL009-10-09.pdf>
- [2] California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at:
http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california_wucols/wucols00.pdf
- [3] CEC. 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December. Available online at:
<http://www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF>

Preferred Literature:

See above

Alternative Literature:

None

Other Literature Reviewed:

None

Water

CEQA# MM D-16

MP# COS-3.1

WUW-6

Water Use

4.2.6 Plant Native or Drought-Resistant Trees and Vegetation

Range of Effectiveness: Best Management Practice; may be quantified if substantial evidence is available.

Measure Description:

California native plants within their natural climate zone and ecotype need minimal watering beyond normal rainfall, so less water is needed for irrigating native plants than non-native species. Drought-resistant vegetation needs even less watering. Water use contributes to GHG emissions indirectly, via the production of the electricity that is used to pump, treat, and distribute the water. Thus, planting native and drought-resistant vegetation reduces water use and the associated GHGs. Designing landscapes with native plants can provide many other benefits, including reducing the need for fertilization and pesticide use, and providing a more natural habitat for native wildlife. Although there is much anecdotal evidence for the benefits of planting native vegetation, few scientific studies have quantified the actual water savings. Therefore, this mitigation measure would most likely be employed as a Best Management Practice. Future studies may quantify the water-saving benefits of planting native or drought-resistant vegetation. In order to take quantitative credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial evidence supporting a percent reduction in water use. The percent reduction would be applied to the baseline water use, calculated according to the baseline methodology described in WUW-3 (Design water efficient landscapes) and the baseline methodology document.

Measure Applicability:

- Outdoor water use

Inputs:

The following information needs to be provided by the Project Applicant:

- Percent reduction in water use, calculated using detailed and substantial evidence
- $Water_{baseline}$, to be calculated by the Project Applicant using the baseline methodology described in WUW-3 (Design water efficient landscapes) and the baseline methodology document

Baseline Method

See WUW-3 (Design water efficient landscapes)

Water

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MP# COS-3.1

WUW-6

Water Use

Mitigation Method

Since this mitigation method does not change the electricity intensity factor (kWh/million gallons) associated with the supply, treatment, and distribution of the water, the percent reduction in GHG emissions is dependent only on the change in water consumption:

$$\text{GHG emission reduction} = \text{PercentReduction} \times \text{Water}_{\text{baseline}}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions for outdoor water use.

$\text{Water}_{\text{baseline}}$ = Baseline water demand, without planting native or drought-resistant vegetation

Provided by Applicant, calculated using baseline methodology of Mitigation Measure WUW-3

PercentReduction = Expected percent reduction in water use resulting from planting native or drought-resistant vegetation

Provided by Applicant

As shown in these equations, the carbon intensity of the local utility does not play a role in determining the percentage reduction in GHG emissions.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	To be determined by Applicant
All other pollutants	Not Quantified ¹⁰⁴

Discussion:

Currently there is not sufficient substantial evidence supporting a generalized reduction in emissions due to planting native or drought tolerant species. However, if the project applicant is able to provide sufficient substantial evidence supporting a reduction in water usage associated with native or drought tolerant species, the percent reduction in GHG emissions is equivalent to the percent reduction in outdoor water usage.

Therefore, if a Project Applicant can support a 10% reduction in water use by native and drought tolerant species, the GHG emissions associated with water use are reduced by 10%.

Assumptions:

None

¹⁰⁴ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

Water

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WUW-6

Water Use

Alternative Literature:

The EPA reports that while there is anecdotal evidence for the water-saving benefits of planting native and drought-resistant vegetation, there are very few scientific studies available which quantify the benefits. There are several good resources available which describe the qualitative benefits. The California Native Plant Society provides many resources for designing a native plant garden, including how to identify native plants and where to buy them. The Las Pilitas Nursery provides similar resources and also lists species of drought-resistant plants that are best for specific California regions. The EPA also provides tips for designing landscapes with native plants.

USEPA. "Exploring the Environmental, Social and Economic Benefits Conference," December 6-7, 2004. USEPA. Greenacres: Landscaping with Native Plants Research Needs. Available online at:

http://www.epa.gov/greenacres/conf12_04/conf_A.html. Accessed March 2010.

California Native Plant Society. Homepage. Available online at: <http://www.cnps.org/>. Accessed March 2010.

Las Pilitas Nursery. Drought Tolerant or Resistant Native Plants. Available online at: [http://www.laspilitas.com/garden/Drought resistant plants for a California garden.html](http://www.laspilitas.com/garden/Drought%20resistant%20plants%20for%20a%20California%20garden.html). Accessed March 2010.

USEPA. Greenacres: Native Plants Brochure. Available online at:

<http://www.epa.gov/greenacres/navland.html#Introduction>. Accessed March 2010.

Alternative Literature:

None.

Other Literature Reviewed:

None

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5.0	Area Landscaping	384	
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Area Landscaping

A-1

Landscaping Equipment

5.0 Landscaping Equipment

5.1 Landscaping Equipment

5.1.1 Prohibit Gas Powered Landscape Equipment.

Measure Description:

Electric lawn equipment including lawn mowers, leaf blowers and vacuums, shredders, trimmers, and chain saws are available. When electric landscape equipment is used in place of a conventional gas-powered equipment, direct GHG emissions from natural gas combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment.

Measure Applicability:

[1] Landscaping equipment

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Horsepower of landscaping equipment
- Hours of operation

Baseline Method:

Look up landscape equipment emission factor based on type of fuel used:

Landscaping Equipment Horsepower	CO ₂ Emission Factor from Gasoline (g/hp-hr)
< 25	429.44
25 – 50	783.30
50 – 120	774.50
120 –175	753.25
> 175	732.00

$$\text{GHG emission} = \text{EF} \times \text{Hp} \times \text{LF} \times \text{Hr} \times 10^{-6}$$

Where:

GHG emission = MT CO₂e per year

EF = CO₂ emission factor for the relevant horsepower tier show in table above
(g/hp-hr). Obtained from OFFROAD2007.



Area Landscaping

A-1

Landscaping Equipment

- Hp = Horsepower of landscaping equipment
- LF = Load factor of equipment for the relevant horsepower tier (dimensionless).
Obtained from OFFROAD2007.
- Hr = Hours of operation per year
- 10⁻⁶ = Unit conversion from grams to MT

Mitigation Method:

Landscaping equipment will run on electricity instead of gasoline. The indirect GHG emission from electricity generation is:

$$\text{GHG emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:

- GHG emissions = MT CO₂e
- Utility = Carbon intensity of Local Utility (CO₂e/kWh). See table below.
- Hp = Horsepower of landscaping equipment.
- LF = Load factor of equipment for the relevant horsepower tier (dimensionless).
Obtained from OFFROAD2007.
- Hr = Hours of operation.
- C = Unit conversion factor

Power Utility	Carbon-Intensity (lb CO ₂ e/kWh)
LADWP	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

$$\text{GHG Reduction \%}^{105} = 1 - \frac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$$

- EF = Emission Factor for the relevant fuel horsepower tier (g/hp-hr)
Obtained from OFFROAD2007. See accompanying tables.

Emission Reduction Ranges and Variables:

Power Utility	Equipment Horsepower	Project GHG Emission Reductions
LADWP	< 25	2.5%
	25 – 50	46.5%

¹⁰⁵ This assumes energy from engine losses are the same.

Area Landscaping

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Landscaping Equipment

Power Utility	Equipment Horsepower	Project GHG Emission Reductions
	50 – 120	45.9%
	120 –175	44.4%
	> 175	42.8%
PG&E	< 25	64.1%
	25 – 50	80.3%
	50 – 120	80.1%
	120 –175	79.5%
	> 175	78.9%
SCE	< 25	49.5%
	25 – 50	72.3%
	50 – 120	72.0%
	120 –175	71.2%
	> 175	70.4%
SDGE	< 25	38.5%
	25 – 50	66.3%
	50 – 120	65.9%
	120 –175	64.9%
	> 175	63.9%
SMUD	< 25	56.3%
	25 – 50	76.0%
	50 – 120	75.8%
	120 –175	75.1%
	> 175	74.3%

Criteria pollutants will be reduced by reduction in combustion. They will also increase through the increase in energy use. However, the increase may not be in the same air basin.

Discussion:

The output from OFFROAD2007 shows the same emissions within each horsepower tier regardless of the year modeled. Therefore, the emission reduction is dependent on the location of the Project and horsepower of the landscaping equipment only.

Assumptions:

Data based upon the following references:

California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007.

Available online at: <http://www.arb.ca.gov/msei/offroad/offroad.htm>

Area Landscaping

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Landscaping Equipment

California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>

Preferred Literature:

The amount of direct GHG emissions avoided can be calculated using CARB's OFFROAD model, which provides state-wide and regional emission factors for different types of landscaping equipment that can be converted to grams per horsepower-hour [1]. Multiplying this factor by the typical horsepower and load factor of the equipment and number of hours of operation gives the direct GHG emissions. Assuming the same number of operating hours and power output as the gas-powered equipment, the same amount of energy consumption multiplied by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with using the electric landscape equipment. The GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Companion Strategy:

In order to take credit for Mitigation Measure 80, a Project Applicant must also commit to providing electrical outlets on the exterior of all buildings (Mitigation Measure 60) so that electrical lawn equipment is compatible with built facilities.

Alternative Literature:

None

Notes:

1. CARB. OFFROAD 2007 Model. Available online at: <http://www.arb.ca.gov/msei/offroad/offroad.htm>. Accessed February 2010.

Other Literature Reviewed:

- A. USEPA. Lawn Mower Exchange Program Calculator. Available online at: http://www.epa.gov/air/community/mowerexchange_calculator.html. Accessed February 2010.
- B. USEPA. Improving Air Quality in Your Community: Outdoor Air – Transportation: Lawn Equipment. Available online at: <http://www.epa.gov/air/community/details/yardequip.html>. Accessed February 2010.
- C. CARB. AB118 Lawn and Garden Equipment Replacement Project. Available online at: <http://www.arb.ca.gov/msprog/aqip/lger.htm>. Accessed February 2010.
- D. SCAQMD. Mow Down Air Pollution Electric Lawn Mower Exchange. Available online at: <http://www.aqmd.gov/tao/lawnmower2009.html>. Accessed February 2010.
- E. VCAPD. Lawn Mower Trade-In Program for Ventura County Residents. Available online at: http://www.vcapcd.org/LawnMower_EN.htm. Accessed February 2010.



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Landscaping Equipment

- F. SMAQMD. Mow Down Air Pollution. Available online at:
<http://www.airquality.org/mobile/mowdown/index.shtml>. Accessed February 2010.

Area

CEQA# MM D-13

MP# EE-4.2

A-2

Landscaping Equipment

5.1.2 Implement Lawnmower Exchange Program

Range of Effectiveness: Best Management Practice, influences Area GHG emissions from landscape equipment

Measure Description:

When electric and rechargeable battery-powered lawnmowers are used in place of conventional gas-powered lawnmowers, direct GHG emissions from fuel combustion are displaced by indirect GHG emissions associated with the electricity used to power the equipment. The indirect GHG emissions from electricity generation are expected to be significantly less than the direct GHG emissions from gasoline or diesel fuel combustion. Since the magnitude of the GHG emissions reduction depends on the equipment model (including electric power efficiency and battery recharge time), hours of operation, fuel displaced, and number of lawnmowers replaced, the exact GHG emissions reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to allow for educated residents and commercial tenants to reduce their contribution to GHG emissions from landscaping. Many California Air Districts, including eight air districts supported by the CARB Lawn and Garden Equipment Replacement (LGER) Project, already have lawnmower exchange programs in place. This Best Management Practice could involve participating in these established lawnmower exchange programs, supplementing the established programs, or implementing a new program for the Project. The Project Applicant should check with the local air district regarding participating in established programs. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:

- GHG emissions from landscaping

Assumptions:

Data based upon the following references:

- CARB. AB118 Lawn and Garden Equipment Replacement Project. Available online at: <http://www.arb.ca.gov/msprog/aqip/lger.htm>. Accessed February 2010.
- SCAQMD. Mow Down Air Pollution Electric Lawn Mower Exchange. Available online at: <http://www.aqmd.gov/tao/lawnmower2009.html>. Accessed February 2010.
- VCAPD. Lawn Mower Trade-In Program for Ventura County Residents. Available online at: http://www.vcapcd.org/LawnMower_EN.htm. Accessed February 2010.
- SMAQMD. Mow Down Air Pollution. Available online at: <http://www.airquality.org/mobile/mowdown/index.shtml>. Accessed February 2010.

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A-2

Landscaping Equipment

Emission Reduction Ranges and Variables:

This is a Best Management Practice and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:

CARB's Lawn and Garden Equipment Replacement (LGER) Project was established to encourage the use of cordless zero-emission lawn and garden equipment and to help bring more electric equipment to the market. The LGER Project provides vouchers for electric cordless residential lawn mowers valued up to \$250 for each gas-powered lawnmower turned in. The LGER Project provides grants to eight air districts with existing lawnmower exchange programs, including AVAQMD, MDAQMD, SCAQMD, SDAPCD, SJVAPCD, SMAQMD, VCAPCD, and YSAQMD. Individual air districts may offer vouchers of different values.

Alternative Literature:

None

Other Literature Reviewed:

- USEPA. Lawn Mower Exchange Program Calculator. Available online at: http://www.epa.gov/air/community/mowerexchange_calculator.html. Accessed February 2010.
- USEPA. Improving Air Quality in Your Community: Outdoor Air – Transportation: Lawn Equipment. Available online at: <http://www.epa.gov/air/community/details/yardequip.html>. Accessed February 2010.

Area

CEQA# MM D-14

MP# MO-2.4

A-3

Landscaping Equipment

5.1.3 Electric Yard Equipment Compatibility

Range of Effectiveness: Best Management Practice, influences Area GHG emissions from landscape equipment. Not applicable on its own. This measure enhances effectiveness of A-1 and A-2.

Measure Description:

This measure is required to be grouped with measures A-1 “Prohibit Gas Powered Landscape Equipment” and A-2 “Implement a Lawnmower Exchange Program.” In order for measures A-1 and A-2 to be feasible, electrical outlets on the exterior of buildings must be accessible so that the electric landscaping equipment can be charged. In this mitigation measure, the Project Applicant commits to providing electrical outlets on the exterior of Project buildings as necessary for sufficient powering of electric lawnmowers and other landscaping equipment.

Measure Applicability:

- This measure is part of a grouped measure
- This measure contributes to reductions in GHG emissions from landscaping

Emission Reduction Ranges and Variables:

This measure is a Best Management Practice grouped with other measures and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of Best Management Practices.

Preferred Literature:

None

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6.1	Solid Waste	392	
6.1.1	Institute or Extend Recycling and Composting Services	401	SW-1
6.1.2	Recycle Demolished Construction Material	402	SW-2

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MP# WRD-2

6.0 Solid Waste

6.1 Solid Waste

6.1.1 Institute or Extend Recycling and Composting Services

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

The transport and decomposition of landfill waste and the flaring of landfill gas all produce GHG emissions. Decomposition of waste produces methane, a GHG which has a global warming potential over 20 times that of CO₂. The transport of waste from the site of generation to the landfill produces GHG emissions from the combustion of the fuel used to power the vehicle. Choosing waste management practices which reduce the amount of waste sent to landfills will reduce GHG emissions. Strategies to reduce landfill waste include increasing recycling, reuse, and composting, and encouraging lifestyle choices and office practices which reduce waste generation.

Current protocols for quantifying emissions reductions from diverted landfill waste developed by the USEPA and the California Center for Integrated Waste Management Board (CIWMB) are based on life-cycle approaches, which reflect emissions and reductions in both the upstream and downstream processes around waste management. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Furthermore, while tools are available to quantify the avoided landfill GHG emissions from a specified amount of diverted or recycled waste, taking credit for this mitigation measure also requires the determination of the effects of instituting or extending recycling and composting services. Since both government and privately-sponsored recycling and composting programs vary dramatically in scope, waste materials accepted, and outreach efforts, no literature references exist which provide default values for percent of waste diverted. To take credit for this measure, the Project Applicant would need to provide detailed and substantial evidence supporting the amount of waste reduced or diverted to recycling and composting due to the institution of extended recycling and composting services.

Measure Applicability:

[2] Solid waste disposed to landfill

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SW-1

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Inputs:

The following information needs to be provided by the Project Applicant:

- For residential buildings: number of residents
- For shopping malls and office buildings: building square footage
- For public venues: annual number of visitors
- For all other commercial buildings: number of employees
- Waste disposal method
- Amount of waste reduced or diverted to recycling and composting due to the institution of extended recycling and composting services.

Baseline Method:

The Project Applicant must first calculate the total amount of waste generated at the project.

For residential buildings and all commercial buildings except shopping malls and offices:

$$\text{Waste}_{\text{baseline total}} = \text{People} \times \text{DisposalRate}$$

For shopping malls and office buildings:

$$\text{Waste}_{\text{baseline total}} = \text{SF} \times \text{DisposalRate}$$

Where:

People = Number of residents, employees, or visitors (for public venues)
Provided by Applicant

SF = Square feet of building
Provided by Applicant

DisposalRate = Annual disposal rate of waste (tons/resident/year,
tons/employee/year, or tons/visitor/year)
From Tables SW-1.1 and SW-1.2

The total waste stream is then portioned into material-specific streams (paper, glass, metal, plastic, etc.) using the percentages listed in Table SW-1.3.

USEPA's Waste Reduction Model (WARM) is used to quantify baseline emissions and emissions reductions from diverting landfill waste to composting or recycling. This web-based tool is available online at

http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_Form.html. The required inputs are the tons of waste associated with one of three waste management practices: landfill (baseline scenario), recycled (mitigated scenario), combusted (not applicable in California), and composted (mitigated scenario). The amount of each type of waste in tons is entered into the "Tons Landfilled" column in the Baseline Scenario of

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WARM to calculate the baseline GHG emissions in metric MT carbon equivalent (MTCE). Other input variables include landfill type (presence of landfill gas control system or not) and distance of waste transport; however, default values can be used.

Mitigation Method:

In WARM, the project applicant specifies the amount of waste associated with each of the three alternative scenarios: waste reduced (e.g. reduced waste generation), waste recycled, and waste composted. WARM then calculates the GHG savings associated with the alternative scenarios as compared with the baseline scenario.

Assumptions:

Data based upon the following reference:

- USEPA. 2009. Waste Reduction Model. Available online at: http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html
- CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: <http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf>
- CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Available online at: <http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry>

Preferred Literature:

USEPA's WARM was developed to track GHG emission reductions from various waste management options. This tool calculates the GHG emissions associated with a baseline waste management strategy, as well as those associated with an alternative strategy that may include source reduction, recycling, composting, combusting, or landfilling. WARM then calculates the GHG savings associated with the alternative strategy as compared with the baseline strategy. WARM requires input of the estimated tons of waste per material type per disposal strategy. There are 34 different material types (e.g., aluminum cans, mixed paper, yard trimmings, carpet). Other input variables include landfill type (presence of landfill gas control system or not) and distance of waste transport; however, default values can be used. Note that WARM was developed based on a life-cycle approach, which reflects emissions and reductions in both the upstream and downstream processes around waste management. USEPA notes that emission factors developed based on this life cycle approach are not appropriate for use in GHG inventories.

Alternative Literature:

None



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Other Literature Reviewed:

- HF&H Consultants. 2008. 5-Year Audit Program Assessment and Final Report. Prepared for StopWaste.Org. Available online at: http://www.stopwaste.org/docs/revised_assessment_report-final_1-08.pdf
- StopWaste.Org. 2008. Multifamily Dwelling Recycling Evaluation Report. Available online at: http://www.stopwaste.org/docs/mfd_evaluation_rpt.pdf

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SW-1

Solid Waste

**Table SW-1.1
Residential Waste Disposal Rates**

Multi-family Homes		
All Counties	All Regions	Annual Disposal Rate (tons/resident/year)
		0.46
Single-family Homes		
County	Region	Annual Disposal Rate (tons/resident/year)
Alameda	Bay Area	0.42
Alpine	Mountain	0.25
Amador	Mountain	0.25
Butte	Central Valley	0.36
Calaveras	Mountain	0.25
Colusa	Central Valley	0.36
Contra Costa	Bay Area	0.42
Del Norte	Coastal	0.44
El Dorado	Mountain	0.25
Fresno	Central Valley	0.36
Glenn	Central Valley	0.36
Humbolt	Coastal	0.44
Imperial	Southern	0.41
Inyo	Mountain	0.25
Kern	Southern	0.41
Kings	Central Valley	0.36
Lake	Central Valley	0.36
Lassen	Mountain	0.25
Los Angeles	Southern	0.41
Madera	Central Valley	0.36
Marin	Bay Area	0.42
Mariposa	Mountain	0.25
Mendocino	Coastal	0.44
Merced	Central Valley	0.36
Modoc	Mountain	0.25
Mono	Mountain	0.25



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Single-family Homes		
County	Region	Annual Disposal Rate (tons/resident/year)
Monterey	Coastal	0.44
Napa	Bay Area	0.42
Nevada	Mountain	0.25
Orange	Southern	0.41
Placer	Central Valley	0.36
Plumas	Mountain	0.25
Riverside	Southern	0.41
Sacramento	Central Valley	0.36
San Benito	Coastal	0.44
San Bernardino	Southern	0.41
San Diego	Southern	0.41
San Francisco	Bay Area	0.42
San Joaquin	Central Valley	0.36
San Luis Obispo	Southern	0.41
San Mateo	Bay Area	0.42
Santa Barbara	Southern	0.41
Santa Clara	Bay Area	0.42
Santa Cruz	Coastal	0.44
Shasta	Mountain	0.25
Sierra	Mountain	0.25
Siskiyou	Mountain	0.25
Solano	Bay Area	0.42
Sonoma	Coastal	0.44
Stanislaus	Central Valley	0.36
Sutter	Central Valley	0.36
Tehama	Central Valley	0.36
Trinity	Mountain	0.25
Tulare	Central Valley	0.36
Tuolumne	Mountain	0.25
Ventura	Southern	0.41
Yolo	Central Valley	0.36
Yuba	Central Valley	0.36

Source:



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Single-family Homes		
County	Region	Annual Disposal Rate (tons/resident/year)

CalRecycle. Solid Waste Characterization Database: Residential Waste Disposal Rates. Available online at: <http://www.calrecycle.ca.gov/wastechar/Resdisp.htm>

CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: <http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf>.



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**Table SW-1.2
Commercial Waste Disposal Rates**

Commercial Industry	Annual Disposal Rate	
Fast-Food Restaurants	2.1	tons/employee/year
Full-Service Restaurants	2.2	tons/employee/year
Food Stores	2.4	tons/employee/year
Durable Wholesale Distributors	1.2	tons/employee/year
Non-Durable Wholesale Distributors	1.4	tons/employee/year
Large Hotels	2.0	tons/employee/year
Building Material & Gardening, Big-Box Stores	3.2	tons/employee/year
Building Material & Gardening, Other Stores	1.7	tons/employee/year
Retail, Big-Box Stores	1.4	tons/employee/year
Retail, Other Stores	0.9	tons/employee/year
Shopping Malls, Anchor Stores	1.1	tons/1,000 sqft/year
Shopping Malls, Other	1.0	tons/1,000 sqft/year
Public Venues and Events	0.1	tons/100 visitors/year
Large Office Buildings	0.9	tons/1,000 sqft/year

Abbreviations:

lb - pound

sqft - square feet

Source:

CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Table 2. Available online at: <http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry>

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Solid Waste

**Table SW-1.3
Waste Streams and Percent of Disposed Waste**

Building Category	Disposed Waste Streams									
	Paper [Mixed Paper, Broad Definition]	Glass [Glass]	Metal [Mixed Metals]	Plastic [Mixed Plastics]	Electronics [Personal Computers]	Organics [Mixed Organics]	Construction & Demolition [Clay Bricks, Concrete]	Household Hazardous, Special, and Mixed Residue [Mixed MSW]		
Residential	27.4%	4.0%	4.6%	8.8%	n/a	45.0%	4.5%	5.5%		
Fast-Food Restaurants	33.0%	0.6%	1.6%	11.6%	0.0%	52.5%	0.6%	0.0%		
Full-Service Restaurants	17.3%	2.7%	2.8%	7.3%	0.1%	66.5%	1.8%	1.5%		
Food Stores	18.5%	0.5%	1.4%	9.5%	0.0%	65.0%	5.0%	0.0%		
Durable Wholesale Distributors	26.3%	0.7%	11.4%	9.9%	0.5%	5.4%	43.5%	2.4%		
Non-Durable Wholesale Distributors	26.5%	0.5%	3.3%	16.0%	2.6%	32.7%	18.4%	0.1%		
Large Hotels	32.3%	4.7%	3.8%	9.7%	0.4%	44.2%	4.8%	0.1%		
Building Material & Gardening, Big-Box Stores	12.2%	1.9%	8.3%	7.1%	1.2%	8.0%	60.1%	1.2%		
Building Material & Gardening, Other Stores	13.4%	5.3%	3.9%	7.1%	1.9%	18.6%	47.4%	2.3%		
Retail, Big-Box Stores	21.7%	1.1%	5.3%	16.0%	0.8%	23.6%	27.1%	4.4%		
Retail, Other Stores	31.8%	6.2%	8.7%	14.4%	0.7%	17.5%	15.0%	5.7%		
Shopping Malls, Anchor Stores	37.9%	5.0%	3.0%	28.8%	0.1%	15.5%	9.1%	0.5%		
Shopping Malls, Other	32.7%	1.8%	2.3%	19.6%	0.2%	35.9%	5.3%	2.0%		
Public Venues and Events	42.0%	5.5%	1.8%	14.8%	0.0%	34.0%	0.7%	1.2%		
Large Office Buildings	50.3%	1.8%	1.6%	12.5%	0.1%	24.4%	8.3%	1.1%		

Abbreviations:

MSW - municipal solid waste

Notes:

The USEPA report identifies waste streams with slightly different names than the CIWMB report. The CIWMB and USEPA waste stream categories were paired; USEPA categories are shown in brackets [] above.

Sources:

CIWMB. 1999. Statewide Waste Characterization Study: Final Results and Report. Available online at: <http://www.calrecycle.ca.gov/publications/LocalAsst/34000009.pdf>
 CIWMB. 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups. Available online at: <http://www.ciwmb.ca.gov/WasteChar/WasteStudies.htm#2006Industry>
 USEPA. 2006. Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks. Available online at: <http://www.epa.gov/climatechange/wycd/waste/SWMGHGreport.html>

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MP# WRD-2.3

SW-2

Solid Waste

6.1.2 Recycle Demolished Construction Material

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Recycling demolished construction material can contribute to GHG reductions in multiple ways. First, it displaces new construction materials, thereby reducing the need for new raw material acquisition and manufacturing of those new construction materials. Harvesting of raw materials and manufacturing new materials requires energy in the form of fuel combustion and electricity, both of which are associated with GHG emissions. If the process of recycling construction materials is less carbon-intensive than the processes required to harvest and produce new construction materials, recycling these construction materials results in a net reduction in GHG emissions. Second, using local recycled construction material reduces the emissions associated with the transportation of new construction materials, which are typically manufactured farther away from a project site. Third, recycling construction material avoids sending this material to landfills. Wood-based materials decompose in landfills and contribute to methane emissions.

Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, this mitigation effort is realized prior to the actual operational lifetime of a project. Therefore, these GHG emissions reductions are best quantified in terms of a life-cycle analysis. Life cycle analyses examine all stages of the life of a product, including raw material acquisition, manufacture, transportation, installation, use, and disposal or recycling. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Measure Applicability:

- Life cycle emissions from construction materials

Preferred Literature:

The California Integrated Waste Management Board (CIWMB) cites decreases in greenhouse gas emissions as a benefit of construction waste management and recycling in its document "Construction Waste Management" which is used as part of California Sustainable Design Training. The document is available online at: www.calrecycle.ca.gov/greenbuilding/training/statemanual/waste.doc

Alternative Literature:

None

Other Literature Reviewed:

None

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7.0	Vegetation	402	
7.1	Vegetation	402	
7.1.1	Urban Tree Planting	402	V-1
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Vegetation

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MP# COS-3.3, COS 3.2

V-1

Vegetation

7.0 Vegetation

7.1 Vegetation

7.1.1 Urban Tree Planting

Range of Effectiveness: CO₂ reduction varies by the number of trees. VOC emissions may increase.

Measure Description:

Planting trees sequesters CO₂ while the trees are actively growing. The amount of CO₂ sequestered depends on the type of tree. IPCC indicates that in most cases, the active growing period of a tree is 20 years and after this time the amount of carbon in biomass slows and will be completely offset by losses from clipping, pruning, and occasional death [1]. Therefore, the emissions only occur for a 20 year period and are summed over all years to give a net one-time GHG benefit.

If large areas of trees will be planted, the lead agency may want to ensure enforceability by requiring submission of annual inventory consistent with the Urban Forest Protocol [2]. This is a comprehensive protocol that requires maintenance and replacement of trees. If the Project Applicant desires to use this approach, calculation methodologies and assumptions presented in the protocol should be used. The information required to implement this protocol is often not available at the time of the CEQA process.

The type of tree species planted will result in varying degrees of carbon sequestration. In addition, trees emit volatile organic compounds (VOCs), which are criteria pollutant precursors. Therefore the Project Applicant may want to consider these issues when selecting the type of tree to plant. See [3] for details on low-VOC trees.

Measure Applicability:

- New trees

Inputs:

The following information needs to be provided by the Project Applicant:

- Species classes of trees planted, if known
- Number of net new trees in each species class, if known
- Total number of net new trees

Baseline Method:

In the baseline case, there are no net new trees planted.

Vegetation

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V-1

Vegetation

Mitigation Method:

Look up default annual CO₂ sequestration rates on a per tree basis:

Broad species class	Default annual CO ₂ accumulation per tree ¹ (MT CO ₂ / year)
Aspen	0.0352
Soft maple	0.0433
Mixed hardwood	0.0367
Hardwood maple	0.0521
Juniper	0.0121
Cedar/larch	0.0264
Douglas fir	0.0447
True fir/Hemlock	0.0381
Pine	0.0319
Spruce	0.0337
Miscellaneous ²	0.0354

1. IPCC's carbon (C) values converted to carbon dioxide (CO₂) using ratio of molecular weights (44/12).
2. Average of all other broad species classes. To be assumed if tree type is not known.

Therefore, the reduction in GHG emissions associated with planting new trees is:

$$\text{GHG emission reduction} = (\text{Growing Period} \times \sum_{i=1}^n [\text{Sequestration } i \times \text{Trees } i]) \div \text{Total GHG emissions}$$

Where:

- GHG emission reduction = Percentage reduction in GHG emissions as compared to total GHG emissions.
- Growing Period = Growing period for all trees, expressed in years (20).
- n = Number of broad species classes. Provided by Applicant.
- Sequestration i = Default annual CO₂ accumulation per tree for broad species class i .
Lookup in table above.
- Trees i = Number of net new trees of broad species class i .
- Total GHG emissions = Total GHG emissions. Provided by Applicant.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Varies based on number of trees
VOC	May increase
All other pollutants	Not Quantified

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Vegetation

Discussion:

If the applicant has baseline total project emissions of 5,000 MT CO₂e per year, and if the applicant elects to mitigate GHG emissions by committing to planting 500 net new “miscellaneous” trees, the applicant would reduce the amount of GHG emissions associated with the project by 7%.

$$\text{GHG Emission Reduced} = \frac{20 \times 0.0354 \times 500}{5,000} = 0.07 \text{ or } 7\%$$

Assumptions:

Data based upon the following reference:

- [1] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Table 8.2. Available online at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_08_Ch8_Settlements.pdf

Preferred Literature:

The IPCC Guidelines [1] provide a method for estimating the amount of carbon sequestered by trees. IPCC default annual CO₂ sequestration rates on a per tree basis are used. Table 8.2 of the IPCC Guidelines provides species class-specific sequestration values. For species that do not appear or if the species is unknown, the average value from Table 8.2 (0.035 MT CO₂ per year per tree) can be assumed to be representative of trees planted. Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years (see p. 8.9). Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. Additional credit may be taken for planting native trees. See WUW-3 for details on the design of water-efficient landscaping.

Alternative Literature:

The Center for Urban Forest Research Tree Carbon Calculator is based on a small set of data and extrapolates annual tree girth increases for various tree species [1]. Furthermore, it extrapolates the amount of carbon associated with a given girth for each tree species. This method is based on extrapolation of a limited dataset. In addition it requires considerably more input requirements that may not be available for CEQA projects. These inputs include knowledge of specific tree species that will be planted and assumptions regarding anticipated growth rates. Considering the order of magnitude of mitigation from this option, the additional complexity of this method would not generally be warranted for most CEQA projects.

The CAR Urban Forest Sector Protocol [2] provides guidelines for estimating the amount of CO₂ sequestered by common California tree species. This methodology



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would require Project Applicants to know the tree species to be planted at the time the CEQA analysis is prepared. Furthermore, this methodology would require Project Applicants to estimate the expected diameter of trees, which is dependent on climate and tree sub-species, among other things.

Alternative Literature References:

[2] CAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at:
<http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/>

[3] The Center for Urban Forest Research Tree Carbon Calculator. Available online at:
<http://www.fs.fed.us/ccrc/topics/urban-forests/>

Other Literature Reviewed:

None

Vegetation

MP# COS-4.1

V-2

Vegetation

7.1.2 Create New Vegetated Open Space

Range of Effectiveness: varies based on amount and type of land vegetated

Measure Description:

A development which re-vegetates or creates vegetated land from previously settled land sequesters CO₂ from the atmosphere which would not have been captured had there been no land-type change. There is no reduction in GHG emissions associated with preservation of a land.

Measure Applicability:

- Open space

Inputs:

The following information needs to be provided by the Project Applicant:

- Types of land uses created
- Acres of each land use created

Baseline Method:

In the baseline case, there is no preserved or created open space.

Mitigation Method:

Lookup carbon dioxide sequestered per acre for each land use that will be preserved or created:

Land Use	Sub-Category	Default annual CO ₂ accumulation per acre ¹ (MT CO ₂ / acre)
Forest Land	Scrub	14.3
	Trees	111
Cropland	--	6.9
Grassland	--	4.31
Wetlands	--	0

1. Calculated by multiplying total biomass (MT dry matter/acre) from IPCC data by the carbon fraction in plant material (0.47), then using the ratio of molecular weights (44/12) to convert from MT of carbon (C) to MT of carbon dioxide (CO₂).

Land uses are defined by IPCC as follows:

(i) Forest Land

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This category includes all land with woody vegetation consistent with thresholds used to define Forest Land in the national greenhouse gas inventory. It also includes systems with a vegetation structure that currently fall below, but *in situ* could potentially reach the threshold values used by a country to define the Forest Land category.

(ii) Cropland

This category includes cropped land, including rice fields, and agro-forestry systems where the vegetation structure falls below the thresholds used for the Forest Land category.

(iii) Grassland

This category includes rangelands and pasture land that are not considered Cropland. It also includes systems with woody vegetation and other non-grass vegetation such as herbs and brushes that fall below the threshold values used in the Forest Land category. The category also includes all grassland from wild lands to recreational areas as well as agricultural and silvi-pastoral systems, consistent with national definitions.

(iv) Wetlands

This category includes areas of peat extraction and land that is covered or saturated by water for all or part of the year (e.g., peatlands) and that does not fall into the Forest Land, Cropland, Grassland or Settlements categories. It includes reservoirs as a managed sub-division and natural rivers and lakes as unmanaged sub-divisions.

$$\text{GHG emission reduction} = \left(\sum_{i=1}^n [\text{Sequestration } i \times \text{Acres } i] \right) \div \text{Total GHG emissions}$$

Where:

GHG emission reduction = Percentage reduction in GHG emissions as compared to total GHG emissions.

n = Number of land uses. Provided by Applicant.

Sequestration *i* = Default annual CO₂ accumulation per acre for land use *i*. Look up in table above.

Acres *i* = Number of acres of land use *i*.

Total GHG emissions = Total one-time GHG emissions. Provided by Applicant.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	Varies
All other pollutants	Not Quantified

Discussion:

If the applicant has baseline one-time emissions of 5,000 MT CO₂e per year, and if the applicant elects to mitigate GHG emissions by committing to creating 50 acres of forest

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land (scrub) and 20 acres of grassland, the applicant would reduce the amount of one-time GHG emissions by 16%.

$$\text{GHG Emission Reduced} = \frac{14.3 \times 50 + 4.31 \times 20}{5,000} = 0.16 \text{ or } 16\%$$

Assumptions:

Data based upon the following references:

[1] IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4. Available online at: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>

Preferred Literature:

The IPCC Guidelines provide a method for calculating changes in CO₂ sequestration due to land-type conversions. While other methods exist, notably the CCAR Forest Protocol [2], the IPCC Guidelines [1] have more general default values available that will be applicable to all areas of California without requiring detailed site-specific information. A general knowledge of the proposed change in land type is sufficient to quantify reductions in greenhouse gas emissions. IPCC designates four general vegetation types: forest land, cropland, grassland, and wetland. The amount of sequestered CO₂ is calculated based on the amount of carbon stock in each type of biomass (MT carbon / hectare vegetation). IPCC defaults for the carbon stock in each vegetation type are summarized in Table 8.4. (Note that this table represents the amount of carbon removed due to land conversion to settlements; it can also be used to calculate the amount of carbon sequestered due to conversion from settlement to vegetated land. Note also that a conversion to wetlands is not relevant for California). In addition to general default values, the IPCC Guidelines have climate and species-specific data available which can be used if details of the proposed development are known. To calculate the final mass of CO₂, the mass of carbon is then multiplied by 3.67, which is the ratio of molecular mass of CO₂ to the molecular mass of carbon. This method assumes that all of the carbon is converted into CO₂, which is appropriate for most CEQA projects.

Alternative Literature:

The CAR Forest Sector Protocol provides guidelines for estimating the amount of CO₂ sequestered by vegetated land [1]. The Protocol is specific to forest land only, and is not appropriate for estimating land-type conversions to or from cropland or grassland. Additionally, the methodology is limited to conversions from vegetated land to settlement or settlement to vegetated land, but is not appropriate for changes from one vegetated land type to another vegetated land type. The Protocol recommends accounting for changes in the organic carbon content of soil, which requires soil sampling and testing. While testing of existing soil is feasible, the protocol does not



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provide adequate methods for predicting the future soil organic carbon content after a land-type conversion has taken places. Furthermore, soil testing may be a burdensome task for a Project Applicant. Methodologies which provide default values, such as the IPCC Guidelines, are preferable.

Alternative Literature References:

[2] CAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: <http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/>

Other Literature Reviewed:

None

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8.1.1	Use Alternative Fuels for Construction Equipment	410	C-1
8.1.2	Use Electric and Hybrid Construction Equipment	420	C-2
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8.1.4	Institute a Heavy-Duty Off-Road Vehicle Plan	431	C-4
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Construction Equipment

8.0 Construction

8.1 Construction

8.1.1 Use Alternative Fuels for Construction Equipment

Range of Effectiveness: 0 – 22% reduction in GHG emissions

Measure Description:

When construction equipment is powered by alternative fuels such as compressed natural gas rather than conventional petroleum diesel or gasoline, GHG emissions from fuel combustion may be reduced.

Measure Applicability:

[3] Construction vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Fuel type and Horsepower of Construction Equipment
- Hours of operation

Baseline Method:

For all pollutants besides ROG emissions from gasoline-fueled equipment, total emission is equivalent to exhaust emission and is calculated as follows:

$$\text{Exhaust Emission} = \frac{\text{Exhaust}}{\text{Activity} \times \text{AvgHP}} \times \text{Hp} \times \text{Hr} \times \text{C}$$

Where:

Exhaust Emission= MT or tons of pollutant per year

Exhaust = Statewide daily emission from equipment for the relevant horsepower tier of diesel or gasoline fuel (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of equipment.

Hr = Hours of operation.

C = Unit conversion factor

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Construction Equipment

Note that this method assumes the load factor of the equipment is same as the default in OFFROAD2007.

Total GHG emission is calculated as follows:

$$\text{GHG Emission} = \text{CO}_2 \text{ Emission} + \text{CH}_4 \text{ Emission} \times 21 + \text{N}_2\text{O Emission} \times 310$$

Where:

GHG Emission = MT CO₂e

CO₂ Emission = CO₂ emission calculated as described above with data from OFFROAD2007.

CH₄ Emission = CH₄ emission calculated as described above with data from OFFROAD2007.

N₂O Emission = N₂O emission calculated as described above with data from OFFROAD2007.

21 = Global warming potential of CH₄ following CCAR GPR 2009.

310 = Global warming potential of N₂O following CCAR GPR 2009.

Total ROG emission from gasoline-fueled equipment is calculated as follows:

$$\text{Total ROG Emission} = \text{Exhaust ROG Emission} + \frac{\text{Resting} + \text{Diurnal} + \text{Hot Soak} + \text{Evaporative}}{\text{Activity} \times \text{AvgHP}} \times \text{Hp} \times \text{Hr} \times \text{C}$$

Where:

Total ROG Emission = Tons of ROG emission per year

Exhaust ROG Emission = ROG emission from exhaust calculated as described above (tons/year)

Resting = Statewide daily resting losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Diurnal = Statewide daily diurnal losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Hot Soak = Statewide daily hot soak losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Evaporative = Statewide daily evaporative losses from equipment for the relevant horsepower tier (tons/day). Obtained from OFFROAD2007.

Activity = Statewide daily average operating hours for the relevant horsepower tier (hours/day). Obtained from OFFROAD2007.

AvgHP = Average horsepower for the relevant horsepower tier (HP). Obtained from OFFROAD2007.

Hp = Horsepower of TRU.

Hr = Hours of operation.

C = Unit conversion factor

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Construction Equipment

Mitigation Method:

Mitigated emissions for this measure are calculated using the same method as baseline method, but with emission factors from compressed natural gas in OFFROAD2007.

Emission Reduction Ranges and Variables:

GHG and criteria pollutant emission reductions from switching diesel or gasoline fuel to compressed natural gas fuel for different years are listed in accompanying tables. Only equipment with emission data for compressed natural gas and either diesel or gasoline fuel in OFFROAD2007 are included.

Discussion:

The emission changes vary over a large range for different pollutants and equipment and between diesel and gasoline. In fact, GHG emissions for several types of equipment running on gasoline and all equipment running on diesel would increase from switching to compressed natural gas, as reflected by the negative reductions in the tables. On the other hand, SO₂ emissions are 100% reduced as there is no SO₂ emissions from equipment running on compressed natural gas according to OFFROAD2007. Other trends include no significant change in PM emissions for most gasoline equipment, considerable decrease in CO emissions from gasoline equipment but significant increase in CO emissions from diesel equipment. Therefore, the Project Applicant has to weigh the costs and benefits from switching to compressed natural gas on a case-by-case basis.

Assumptions:

Data based upon the following references:

- California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: <http://www.arb.ca.gov/msei/offroad/offroad.htm>
- California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: <http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html>
California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>

Preferred Literature:

GHG emissions from the combustion of conventional petroleum diesel and gasoline fuel can be calculated using CARB's OFFROAD model emission factors [1]. The model provides state-wide and regional emission factors that can be converted to grams per horsepower-hour. Multiplying this factor by the typical horsepower of the equipment and the estimated number of hours of operation gives the total GHG emissions. In this mitigation measure, compressed natural gas was chosen as the alternative fuel. Emission factors for compressed natural gas can also be obtained from OFFROAD The

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Construction Equipment

GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from using petroleum diesel or gasoline versus using compressed natural gas. Other types of alternative fuels besides compressed natural gas exist. In order to take credit for this mitigation measure, the Project Applicant would need to provide detailed and substantial documentation showing expected reductions in GHG emissions as a result of running construction equipment on these alternative fuels rather than petroleum diesel or gasoline. One potential issue with quantifying this mitigation measure is the difference in fuel economy between petroleum diesel and alternative fuels.

Alternative Literature:

Many USDOE, NREL, and USEPA reports exist which present data on exhaust emissions from engines operating with alternative fuels. The majority of these reports focuses on oxides of nitrogen (NO_x) and particulate matter (PM) emissions and have limited CO₂ emissions and fuel economy data. One NREL report shows CO₂ emissions and fuel economy for three ethanol/diesel blends (7.7%, 10%, and 15%) in three off-road engines (6.8, 8.1, and 12.5 L) and compares the results to engine performance using conventional diesel fuel [5]. However, this report presented engine-specific data from a small study size. Issues with other reports include the study's focus on on-road engines rather than off-road engines which would be used in construction equipment. It would be difficult to generalize the data contained in these reports for a Project Applicant's ease of use.

Notes:

- [1] CARB. OFFROAD 2007 Model. Available online at:
<http://www.arb.ca.gov/msei/offroad/offroad.htm>. Accessed February 2010.

Other Literature Reviewed:

- [2] USEPA. 2002. A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions. Available online at:
<http://www.epa.gov/otaq/models/analysis/biodsl/p02001.pdf>
- [3] USDOE. NREL: ReFUEL Laboratory: Data and Resources. Available online at:
http://www.nrel.gov/vehiclesandfuels/refuelab/data_resources.html. Accessed March 2010.
- [4] USDOE. 2006. NREL: Effects of Biodiesel Blends on Vehicle Emissions. Available online at: <http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/40554.pdf>
- [5] USDOE. 2003. NREL: The Effect of Biodiesel Composition on Engine Emissions from a DDC Series 60 Diesel Engine. Available online at:
<http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/31461.pdf>

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Construction Equipment

**Table C-1.1
Emission Reduction Due to Fuel Switch from Gasoline to Compressed Natural Gas**

Equipment	Horsepower	2004					
		CO	CO ₂ e	NO _x	PM	ROG	SO ₂
Aerial Lifts	<15	59%	-27%	36%	91%	98%	100%
	15 - 25	61%	-40%	7%	90%	97%	100%
Air Conditioner	< 175	24%	14%	19%	0%	97%	100%
Baggage Tug	< 120	46%	15%	-4%	0%	93%	100%
Belt Loader	< 120	52%	18%	3%	0%	95%	100%
Bobtail	< 120	55%	17%	19%	0%	95%	100%
Cargo Loader	< 120	41%	16%	2%	0%	93%	100%
Catering Truck	< 250	31%	12%	25%	0%	94%	100%
Forklifts	< 25	53%	-46%	23%	-85%	92%	100%
	25 - 50	94%	22%	-33%	0%	97%	100%
	50 - 120	58%	19%	18%	0%	96%	100%
	120 - 175	24%	17%	24%	0%	94%	100%
Fuel Truck	<175	3%	18%	17%	0%	99%	100%
Generator Sets	<120	52%	18%	14%	0%	96%	100%
	120 - 175	22%	14%	21%	0%	95%	100%
Lav Truck	<175	32%	18%	17%	0%	94%	100%
Lift	<120	53%	17%	14%	0%	96%	100%
Passenger Stand	<175	27%	15%	22%	0%	96%	100%
Service Truck	<250	13%	16%	26%	0%	95%	100%

Equipment	Horsepower	2010					
		CO	CO ₂ e	NO _x	PM	ROG	SO ₂
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	95%	100%
Air Conditioner	< 175	29%	14%	19%	0%	98%	100%
Baggage Tug	< 120	13%	13%	-114%	0%	84%	100%
Belt Loader	< 120	27%	15%	-82%	0%	91%	100%
Bobtail	< 120	29%	16%	11%	0%	96%	100%
Cargo Loader	< 120	15%	14%	-70%	0%	89%	100%
Catering Truck	< 250	35%	12%	29%	0%	95%	100%
Forklifts	< 25	53%	-51%	3%	-85%	85%	100%
	25 - 50	95%	22%	18%	0%	98%	100%
	50 - 120	52%	18%	5%	0%	95%	100%
	120 - 175	27%	14%	23%	0%	94%	100%
Fuel Truck	<175	9%	16%	15%	0%	100%	100%
Generator Sets	<120	40%	17%	16%	0%	97%	100%
	120 - 175	26%	14%	23%	0%	95%	100%
Lav Truck	<175	36%	15%	-18%	0%	94%	100%
Lift	<120	44%	17%	16%	0%	96%	100%

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Construction Equipment

Passenger Stand	<175	32%	15%	25%	0%	97%	100%
Service Truck	<250	19%	14%	40%	0%	95%	100%

Equipment	Horsepower	2015					
		CO	CO ₂ e	NOx	PM	ROG	SO ₂
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	31%	13%	23%	0%	99%	100%
Baggage Tug	< 120	8%	14%	-93%	0%	85%	100%
Belt Loader	< 120	22%	16%	-69%	0%	92%	100%
Bobtail	< 120	25%	16%	13%	0%	96%	100%
Cargo Loader	< 120	5%	14%	-91%	0%	88%	100%
Catering Truck	< 250	38%	11%	33%	0%	95%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	22%	34%	0%	98%	100%
	50 - 120	52%	18%	6%	0%	95%	100%
	120 - 175	27%	14%	25%	0%	95%	100%
Fuel Truck	<175	12%	15%	13%	0%	100%	100%
Generator Sets	<120	21%	16%	17%	0%	97%	100%
	120 - 175	29%	13%	24%	0%	96%	100%
Lav Truck	<175	36%	15%	-24%	0%	95%	100%
Lift	<120	37%	16%	16%	0%	96%	100%
Passenger Stand	<175	34%	14%	28%	0%	98%	100%
Service Truck	<250	22%	13%	46%	0%	96%	100%

Equipment	Horsepower	2020					
		CO	CO ₂ e	NOx	PM	ROG	SO ₂
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	32%	13%	24%	0%	99%	100%
Baggage Tug	< 120	7%	15%	-49%	0%	89%	100%
Belt Loader	< 120	21%	16%	-27%	0%	94%	100%
Bobtail	< 120	26%	16%	13%	0%	96%	100%
Cargo Loader	< 120	3%	15%	-62%	0%	91%	100%
Catering Truck	< 250	39%	11%	36%	0%	96%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	22%	36%	0%	98%	100%
	50 - 120	52%	18%	8%	0%	95%	100%
	120 - 175	27%	14%	26%	0%	95%	100%
Fuel Truck	<175	12%	14%	9%	0%	100%	100%
Generator Sets	<120	-5%	16%	17%	0%	98%	100%
	120 - 175	30%	13%	25%	0%	97%	100%
Lav Truck	<175	36%	15%	3%	0%	96%	100%

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Lift	<120	30%	16%	15%	0%	97%	100%
Passenger Stand	<175	35%	14%	30%	0%	98%	100%
Service Truck	<250	23%	13%	42%	0%	96%	100%

Equipment	Horsepower	2025					
		CO	CO ₂ e	NOx	PM	ROG	SO ₂
Aerial Lifts	<15	58%	-27%	39%	91%	96%	100%
	15 - 25	58%	-37%	32%	90%	94%	100%
Air Conditioner	< 175	32%	13%	27%	0%	99%	100%
Baggage Tug	< 120	8%	15%	-27%	0%	92%	100%
Belt Loader	< 120	21%	17%	-7%	0%	96%	100%
Bobtail	< 120	25%	16%	13%	0%	96%	100%
Cargo Loader	< 120	3%	16%	-40%	0%	93%	100%
Catering Truck	< 250	39%	11%	36%	0%	96%	100%
Forklifts	< 25	53%	-51%	3%	-85%	84%	100%
	25 - 50	95%	21%	36%	0%	98%	100%
	50 - 120	52%	18%	8%	0%	95%	100%
	120 - 175	27%	14%	26%	0%	95%	100%
Fuel Truck	<175	13%	14%	13%	0%	100%	100%
Generator Sets	<120	-15%	16%	18%	0%	98%	100%
	120 - 175	30%	13%	26%	0%	98%	100%
Lav Truck	<175	36%	15%	22%	0%	97%	100%
Lift	<120	27%	16%	15%	0%	97%	100%
Passenger Stand	<175	35%	13%	30%	0%	99%	100%
Service Truck	<250	24%	12%	34%	0%	96%	100%

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Table C-1.2
Emission Reduction Due to Fuel Switch from Diesel to Compressed Natural Gas

Equipment	Horsepower	2004					
		CO	CO ₂ e	NO _x	PM	ROG	SO ₂
Aerial Lifts	<15	-2749%	-27%	55%	36%	73%	100%
	15 - 25	-2912%	-31%	46%	26%	74%	100%
Air Conditioner	<175	-451%	-21%	-30%	84%	87%	100%
Baggage Tug	<120	-507%	-24%	10%	94%	88%	100%
Belt Loader	<120	-469%	-23%	6%	93%	89%	100%
Bobtail	<120	-441%	-22%	23%	93%	91%	100%
Cargo Loader	<120	-625%	-25%	-4%	93%	84%	100%
Catering Truck	<250	-1152%	-22%	-44%	70%	78%	100%
Forklifts	<50	-21%	-23%	-51%	93%	95%	100%
	50 - 120	-594%	-25%	5%	93%	87%	100%
	120 - 175	-581%	-22%	-2%	88%	89%	100%
Generator Sets	<120	-397%	-12%	-2%	92%	91%	100%
	<175	-415%	-12%	-11%	85%	89%	100%
Lav Truck	<175	-457%	-22%	-11%	88%	89%	100%
Lift	<120	-465%	-23%	-5%	92%	89%	100%

Equipment	Horsepower	2010					
		CO	CO ₂ e	NO _x	PM	ROG	SO ₂
Aerial Lifts	<15	-3037%	-27%	31%	-29%	59%	100%
	15 - 25	-3755%	-32%	40%	-3%	60%	100%
Air Conditioner	<175	-450%	-20%	-36%	73%	85%	100%
Baggage Tug	<120	-556%	-22%	22%	92%	88%	100%
Belt Loader	<120	-513%	-22%	21%	92%	90%	100%
Bobtail	<120	-480%	-19%	64%	91%	96%	100%
Cargo Loader	<120	-678%	-24%	6%	91%	84%	100%
Catering Truck	<250	-1732%	-21%	-38%	53%	73%	100%
Forklifts	<50	-54%	-21%	26%	90%	96%	100%
	50 - 120	-647%	-22%	32%	90%	90%	100%
	120 - 175	-598%	-21%	38%	82%	90%	100%
Generator Sets	<120	-430%	-11%	11%	89%	91%	100%
	<175	-436%	-11%	0%	81%	89%	100%
Lav Truck	<175	-477%	-21%	1%	84%	90%	100%
Lift	<120	-503%	-22%	9%	90%	89%	100%

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Equipment	Horsepower	2015					
		CO	CO ₂ e	NOx	PM	ROG	SO ₂
Aerial Lifts	<15	-3040%	-27%	28%	-86%	57%	100%
	15 - 25	-4465%	-32%	32%	-48%	46%	100%
Air Conditioner	<175	-450%	-19%	-41%	47%	85%	100%
Baggage Tug	<120	-590%	-21%	30%	91%	89%	100%
Belt Loader	<120	-541%	-21%	31%	90%	91%	100%
Bobtail	<120	-505%	-19%	65%	89%	96%	100%
Cargo Loader	<120	-720%	-22%	4%	88%	83%	100%
Catering Truck	<250	-1899%	-20%	-54%	16%	72%	100%
Forklifts	<50	-85%	-20%	41%	83%	94%	100%
	50 - 120	-682%	-21%	23%	81%	89%	100%
	120 - 175	-596%	-20%	36%	68%	91%	100%
Generator Sets	<120	-456%	-11%	22%	84%	91%	100%
	<175	-444%	-10%	12%	71%	90%	100%
Lav Truck	<175	-483%	-20%	10%	76%	91%	100%
Lift	<120	-531%	-21%	17%	85%	89%	100%

Equipment	Horsepower	2020					
		CO	CO ₂ e	NOx	PM	ROG	SO ₂
Aerial Lifts	<15	-3040%	-27%	28%	-91%	57%	100%
	15 - 25	-4722%	-32%	29%	-91%	39%	100%
Air Conditioner	<175	-449%	-19%	-104%	-81%	88%	100%
Baggage Tug	<120	-621%	-20%	31%	87%	90%	100%
Belt Loader	<120	-569%	-20%	31%	85%	91%	100%
Bobtail	<120	-526%	-19%	53%	84%	95%	100%
Cargo Loader	<120	-757%	-21%	-9%	78%	81%	100%
Catering Truck	<250	-1946%	-20%	-120%	-75%	73%	100%
Forklifts	<50	-100%	-20%	32%	60%	91%	100%
	50 - 120	-696%	-21%	-17%	55%	84%	100%
	120 - 175	-596%	-20%	-12%	31%	89%	100%
Generator Sets	<120	-476%	-10%	25%	69%	91%	100%
	<175	-446%	-10%	5%	48%	90%	100%
Lav Truck	<175	-485%	-19%	-3%	56%	91%	100%
Lift	<120	-553%	-20%	13%	72%	89%	100%

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Equipment	Horsepower	2025					
		CO	CO ₂ e	NO _x	PM	ROG	SO ₂
Aerial Lifts	<15	-3040%	-27%	28%	-91%	57%	100%
	15 - 25	-4803%	-32%	27%	-109%	37%	100%
Air Conditioner	<175	-450%	-19%	-346%	-331%	88%	100%
Baggage Tug	<120	-640%	-19%	17%	79%	89%	100%
Belt Loader	<120	-587%	-20%	16%	72%	90%	100%
Bobtail	<120	-548%	-19%	32%	72%	93%	100%
Cargo Loader	<120	-763%	-20%	-40%	56%	78%	100%
Catering Truck	<250	-1936%	-20%	-330%	-294%	72%	100%
Forklifts	<50	-106%	-20%	19%	-26%	89%	100%
	50 - 120	-703%	-21%	-69%	-48%	79%	100%
	120 - 175	-597%	-20%	-172%	-110%	83%	100%
Generator Sets	<120	-483%	-10%	13%	37%	90%	100%
	<175	-446%	-10%	-37%	-3%	90%	100%
Lav Truck	<175	-486%	-19%	-57%	5%	90%	100%
Lift	<120	-560%	-20%	-8%	37%	87%	100%



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8.1.2 Use Electric and Hybrid Construction Equipment

Range of Effectiveness: 2.5 – 80% of GHG emissions from equipment that is electric or hybrid if used 100% of the time

Measure Description:

When construction equipment is powered by grid electricity rather than fossil fuel, direct GHG emissions from fuel combustion are replaced with indirect GHG emissions associated with the electricity used to power the equipment. When construction equipment is powered by hybrid-electric drives, GHG emissions from fuel combustion are reduced.

Measure Applicability:

- Construction vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Electricity provider for the Project
- Fuel type and Horsepower of Construction Equipment
- Hours of operation

Baseline Method:

$$\text{Baseline Emission} = \text{EF} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:

- Emission = MT CO₂e or MT Criteria Pollutant
- EF = Emission factor for the relevant fuel horsepower tier (g/hp-hr).
Obtained from OFFROAD2007. See accompanying tables
- Hp = Horsepower of equipment.
- LF = Load factor of equipment for the relevant horsepower tier (dimensionless).
Obtained from OFFROAD2007.
- Hr = Hours of operation.
- C = Unit conversion factor

Mitigation Method:

Fully Electric Vehicle

Construction vehicles will run solely on electricity. The indirect GHG emission from electricity generation is:

$$\text{Mitigated GHG Emission} = \text{Utility} \times \text{Hp} \times \text{LF} \times \text{Hr} \times \text{C}$$

Where:



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GHG emissions = MT CO₂e

Utility = Carbon intensity of Local Utility (CO₂e/kWh)

Hp = Horsepower of equipment.

LF = Load factor of equipment for the relevant horsepower tier (dimensionless).
Obtained from OFFROAD2007.

Hr = Hours of operation.

C = Unit conversion factor

Criteria pollutant emissions will be 100% reduced for equipment running solely on electricity.

$$\text{GHG Reduction \%}^{106} = 1 - \frac{\text{Utility} \times \text{C}}{\text{EF} \times 10^{-6}}$$

Hybrid-Electric Vehicle

GHG Reduction % = Percent Reduction in Fuel Consumption

Emission Reduction Ranges and Variables:

Fully Electric Vehicle

GHG

Utility	Diesel	Compressed Natural Gas 4-strokes	Gasoline 2-strokes	Gasoline 4-strokes				
				<25 HP	25-50 HP	50-120 HP	120-175 HP	175-500 HP
LADW&P	26.3%	37.9%	2.5%	2.5%	46.5%	45.9%	44.4%	42.8%
PG&E	72.9%	77.1%	64.1%	64.1%	80.3%	80.1%	79.5%	78.9%
SCE	61.8%	67.9%	49.5%	49.5%	72.3%	72.0%	71.2%	70.4%
SDGE	53.5%	60.9%	38.5%	38.5%	66.3%	65.9%	64.9%	63.9%
SMUD	67.0%	72.2%	56.3%	56.3%	76.0%	75.8%	75.1%	74.3%

Criteria pollutant

Emissions will be 100% reduced for equipment running on electricity.

Hybrid-Electric Vehicle

GHG

The Project Applicant has to determine the fuel consumption reduced from using the hybrid-electric vehicle. The emission reductions for all pollutants are the same as the fuel reduction.

¹⁰⁶ This assumes energy from engine losses are the same.

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Discussion:

The CO₂ emission factor show in the accompanying tables obtained from OFFROAD2007 [1] shows the same emissions within each horsepower tier regardless of the scenario year or equipment model year. The contributions of CH₄ and N₂O to overall GHG emissions is likely small (< 1% of total CO₂e) from diesel construction equipment [2] and were therefore not included. Therefore, the CO₂e emission reduction is dependent on the electricity provider for the Project, horsepower and fuel of the construction equipment only.

On the other hand, the criteria pollutant emission factors from OFFROAD2007 vary for different scenario and equipment model years. The criteria pollutant emission factors presented in the accompanying tables correspond to those of new equipment in the respective scenario years, i.e., model year is the same as scenario year. Since older equipment have higher emission factors due to deterioration and less regulation, the emission reduction calculated from this methodology is likely to be an underestimate.

Assumptions:

Data based upon the following references:

- [1] California Air Resources Board. Off-road Emissions Inventory. OFFROAD2007. Available online at: <http://www.arb.ca.gov/msei/offroad/offroad.htm>
- [2] California Climate Action Registry (CCAR). 2009. General Reporting Protocol. Version 3.1. Available online at: <http://www.climateregistry.org/tools/protocols/general-reporting-protocol.html>
- [3] California Climate Action Registry Reporting Online Tool. 2006 PUP Reports. Available online at: <https://www.climateregistry.org/CARROT/public/reports.aspx>

Preferred Literature:

Electric construction equipment is available commercially from companies such as Peterson Pacific Corporation and Komptech USA, which specialize in the mechanical processing equipment like grinders and shredders [4,5]. The amount of direct GHG emissions avoided can be calculated using CARB's OFFROAD2007 model, which provides state-wide and regional emission factors for a variety of construction equipment that can be converted to grams per horsepower-hour [6]. Multiplying this factor by the number of hours of operation gives the direct GHG emissions. Assuming the same number of operating hours as the diesel-powered equipment, the electricity required to run a piece of electric construction equipment can be calculated by multiplying the operating hours by the amperage required to run the equipment and the voltage rating (obtained from manufacturer technical specifications) to obtain total kWh required. Multiplying this value by the carbon-intensity factor of the local utility gives the amount of indirect GHG emissions associated with using the electric equipment. The



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GHG emissions reduction associated with this mitigation measure is therefore the difference in emissions from these two scenarios.

Construction equipment powered by hybrid-electric drives is also commercially available from companies such as Caterpillar [7]. For example, Caterpillar reports that during an 8-hour shift, its D7E hybrid dozer burns 19.5% fewer gallons of fuel than a conventional dozer while achieving a 10.3% increase in productivity. The D7E model burns 6.2 gallons per hour compared to a conventional dozer which burns 7.7 gallons per hour. The percent reduction in fuel use is directly proportional to the percent reduction in GHG emissions. Assuming complete combustion to CO₂ and a carbon content of 87%, the CO₂ emissions reductions can be calculated. Fuel usage and savings are dependent on the make and model of the construction equipment used. The Project Applicant should calculate project-specific savings and provide manufacturer specifications indicating fuel burned per hour.

Alternative Literature:

None

Notes:

[4] Peterson Pacific Corp. Product Brochure Downloads. Available online at: http://www.petersonpacific.com/content/MediaGallery_56_v. Accessed March 2010.

[5] Komptech USA. Products. Available online at: <http://www.komptech.com/usa/products.htm>. Accessed March 2010.

[6] CARB. OFFROAD 2007 Model. Available online at: <http://www.arb.ca.gov/msei/offroad/offroad.htm>. Accessed February 2010.

[7] Caterpillar. D7E Efficiency. Accessed February 2010. Available online at: <http://www.cat.com/D7E>

Other Literature Reviewed:

None

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**Table C-2.1
Emissions Factors from Different Fuels**

Fuel	HP	CO ₂ Emission Factor (g/hp-hr)
		All Years
Compressed Natural Gas 4-stroke	All	674.66
Diesel	All	568.30
Gasoline 2-stroke	All	429.44
Gasoline 4-stroke	<25	429.44
	25-50	783.30
	50-120	774.50
	120-175	753.25
	175-500	732.00

Fuel	HP	ROG Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
	25-50	0.06	0.01	0.01
	50-120	0.07	0.01	0.01
	120-175	0.06	0.01	0.01
	175-250	0.06	0.01	0.01
	250-500	0.06	0.01	0.01
Diesel	<15	0.57	0.41	0.41
	15-25	0.54	0.48	0.48
	25-50	0.54	0.20	0.08
	50-120	0.38	0.16	0.08
	120-175	0.18	0.13	0.08
	175-250	0.12	0.08	0.06
	250-500	0.10	0.08	0.06
	500-750	0.12	0.08	0.06
	750-1000	0.57	0.08	0.06
	>1000	0.57	0.08	0.08
Gasoline 2-stroke	<2	6.70	5.52	5.52
	2-15	4.19	3.59	3.59
	15-25	4.07	3.79	3.79
Gasoline 4-stroke	<5	6.70	5.52	5.52
	5-15	4.19	3.59	3.59
	15-25	4.07	3.79	3.79



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Fuel	HP	ROG Emission Factor (g/hp-hr)		
		2004	2010	2015+
	25-50	1.49	0.65	0.65
	50-120	0.91	0.24	0.24
	120-175	0.72	0.15	0.15
	175-250	0.72	0.15	0.15
	250-500	0.72	0.15	0.15

Fuel	HP	CO Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	300	300	300
	15-25	300	300	300
	25-50	7.02	7.02	7.02
	50-120	20	20	20
	120-175	16	16	16
	175-250	16	16	16
	250-500	16	16	16
Diesel	<15	3.47	3.47	3.47
	15-25	2.34	2.34	2.34
	25-50	3.27	2.86	2.72
	50-120	3.23	3.09	3.05
	120-175	2.70	2.70	2.70
	175-250	0.92	0.92	0.92
	250-500	0.92	0.92	0.92
	500-750	0.92	0.92	0.92
	750-1000	2.70	0.92	0.92
>1000	2.70	0.92	0.92	
Gasoline 2-stroke	<2	318	236	236
	2-15	274	225	225
	15-25	284	238	238
Gasoline 4-stroke	<5	318	236	236
	5-15	274	225	225
	15-25	284	238	238
	25-50	71	38	38
	50-120	38	8.76	8.76
	120-175	21	21	21
	175-250	21	21	21
	250-500	21	21	21

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Fuel	HP	NOx Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	8.44	8.44	8.44
	15-25	8.44	8.44	8.44
	25-50	5.19	1.95	1.95
	50-120	4.57	1.58	1.58
	120-175	4.56	1.58	1.58
	175-250	4.56	1.58	1.58
	250-500	4.56	1.58	1.58
Diesel	<15	6.08	4.37	4.37
	15-25	5.79	4.57	4.57
	25-50	5.10	4.88	4.80
	50-120	5.64	5.01	2.53
	120-175	4.72	4.44	2.27
	175-250	4.58	2.45	1.36
	250-500	4.29	2.45	1.36
	500-750	4.51	2.45	1.36
	750-1000	8.17	4.08	2.36
	>1000	8.17	4.08	2.36
Gasoline 2-stroke	<2	2.32	2.70	2.70
	2-15	2.84	2.90	2.90
	15-25	2.32	2.68	2.68
Gasoline 4-stroke	<5	2.32	2.70	2.70
	5-15	2.84	2.90	2.90
	15-25	2.32	2.68	2.68
	25-50	4.52	1.33	1.33
	50-120	5.06	1.78	1.78
	120-175	4.98	1.94	1.94
	175-250	4.98	1.94	1.94
	250-500	4.98	1.94	1.94



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Fuel	HP	PM Emission Factor (g/hp-hr)		
		2004	2010	2015+
Compressed Natural Gas 4-strokes	<15	0.90	0.90	0.90
	15-25	0.90	0.90	0.90
	25-50	0.06	0.06	0.06
	50-120	0.06	0.06	0.06
	120-175	0.06	0.06	0.06
	175-250	0.06	0.06	0.06
	250-500	0.06	0.06	0.06
Diesel	<15	0.47	0.38	0.38
	15-25	0.38	0.38	0.38
	25-50	0.43	0.35	0.16
	50-120	0.39	0.24	0.01
	120-175	0.19	0.16	0.01
	175-250	0.11	0.11	0.01
	250-500	0.11	0.11	0.01
	500-750	0.11	0.11	0.01
	750-1000	0.38	0.11	0.06
	>1000	0.38	0.11	0.06
Gasoline 2-stroke	<2	0.74	0.74	0.74
	2-15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
Gasoline 4-stroke	<5	0.74	0.74	0.74
	5-15	0.14	0.14	0.14
	15-25	0.14	0.14	0.14
	25-50	0.06	0.06	0.06
	50-120	0.06	0.06	0.06
	120-175	0.06	0.06	0.06
	175-250	0.06	0.06	0.06
	250-500	0.06	0.06	0.06

8.1.3 Limit Construction Equipment Idling beyond Regulation Requirements

Range of Effectiveness: Varies with the amount of Project Idling occurring and the amount reduced.

Measure Description:

Heavy duty vehicles will idle during loading/unloading and during layovers or rest periods with the engine still on. Idling requires fuel use and results in emissions. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emission Reduction Program limits diesel-fueled commercial motor vehicles idling time to 5 minutes. There are some exceptions to the regulation such as positioning or providing a power source for equipment or operations such as lift, crane, pump, drill, hoist or other auxiliary equipment. Reduction in idling time beyond required under the regulation would further reduce fuel consumption and thus emissions. The project applicant should develop an enforceable mechanism that monitors the idling time to ensure compliance with this mitigation measure.

Measure Applicability:

- Heavy Duty Commercial Vehicles

Inputs:

The following information needs to be provided by the Project Applicant:

- Idling time of vehicle

Baseline Method:

For all pollutants, the idling emission from each idling period is calculated as follows:

$$\text{Emission} = \text{EF} \times \text{t} \times \text{C}$$

Where:

Emission = grams of pollutant per idling period

EF = Idling emission factor for diesel-fueled heavy duty vehicles obtained from EMFAC (g/idling-hour).

t = Baseline idling period (minute). This is 5 minutes for all vehicles which do not have auxiliary equipment powered by the primary engine exempted from the regulation. For exempted vehicles, the Project applicant shall determine the baseline idling period.

C = Time conversion factor = 1/60

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Mitigation Method:

Mitigated emissions for this measure are calculated using the same method as baseline method, but with mitigated idling period.

Emission Reduction Ranges and Variables:

Emission reduction is calculated as follows:

$$\text{Reduction} = 1 - \frac{t_M}{t_B}$$

Where:

t_M = mitigated idling period

t_B = baseline idling period

Discussion:

If a heavy duty truck is regulated under the CARB Idling Emission Reduction Program, and the Project Applicant has committed to enforce a reduced idling period to 3 minutes, then the emissions for all pollutants from idling emissions would be reduced by:

$$1 - \frac{3}{5} = 0.4 = 40\%$$

If the Project Applicant determines that the average idling period for a heavy duty vehicle with a hoist powered by the primary engine is 20 minutes, and has committed to enforce a reduced idling time to 15 minutes, then the emissions for all pollutants would be reduced by:

$$1 - \frac{15}{20} = 0.25 = 25\%$$

Assumptions:

Data based upon the following references:

- California Air Resources Board (CARB) 2009. Heavy-Duty Vehicle Idling Emission Reduction Program. Available at: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>
- CARB 2010. EMFAC2007 Model. Available at: http://www.arb.ca.gov/msei/onroad/latest_version.htm

Preferred Literature:

Idling of heavy duty commercial vehicles requires fuel use and results in emissions. Project Applicant can obtain the average idling emission factor for diesel-fueled heavy

Construction



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C-3

Construction Equipment

duty trucks in the county where the Project would be located from EMFAC. The total idling emissions can be determined by multiplying this emission factor by the total idling period. The California Air Resources Board (CARB) Heavy-Duty Vehicle Idling Emission Reduction Program limits diesel-fueled commercial motor vehicles idling time to 5 minutes, with exceptions for some vehicles with auxiliary equipment powered by the primary engine [1]. The Project Applicant has to determine the appropriate baseline idling periods for such exempted vehicles. A plan should also be developed to ensure enforcement of the reduced idling period that the Project Applicant has committed to.

Alternative Literature:

None

Notes:

[1] California Air Resources Board (CARB) 2009. Heavy-Duty Vehicle Idling Emission Reduction Program. Available at: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>

Other Literature Reviewed:

None



Construction

MP# TR-6.2, EE-1

C-4

Construction Equipment

8.1.4 Institute a Heavy-Duty Off-Road Vehicle Plan

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring hour meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliances with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None



Construction

C-5

Construction Equipment

8.1.5 Implement a Construction Vehicle Inventory Tracking System

Range of Effectiveness:

Not applicable on its own. This measure ensures compliances with other mitigation measures.

Measure Description:

The Project Applicant should provide a detailed plan that discusses a construction vehicle inventory tracking system to ensure compliances with construction mitigation measures. The system should include strategies such as requiring engine run time meters on equipment, documenting the serial number, horsepower, manufacture age, fuel, etc. of all onsite equipment and daily logging of the operating hours of the equipment.

Measure Applicability:

- This measure ensures compliance with other mitigation measures.
- Construction vehicles.

Preferred Literature:

None

Alternative Literature:

None

Literature References:

None

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Miscellaneous

MP# LU-5

Misc-1

Carbon Sequestration

9.0 Miscellaneous

9.1 Miscellaneous

9.1.1 Establish a Carbon Sequestration Project

Range of Effectiveness: Varies depending on Project Applicant and projects selected. The GHG emissions reduction is subtracted from the overall baseline project emissions inventory.

Measure Description:

The Project Applicant would establish a carbon sequestration project. This might include (a) geologic sequestration or carbon capture and storage techniques in which CO₂ from point sources such as power plants and fuel processing plants is captured and injected underground, (b) terrestrial sequestration in which ecosystems such as wetlands and forestlands are established or preserved to serve as CO₂ sinks, (c) novel techniques involving advanced chemical or biological pathways, or (d) technologies yet to be discovered. The Project Applicant would commit to a desired amount of carbon sequestration in MT per year. This amount would be subtracted from the overall baseline project emissions inventory. In order to take credit for this measure, the Project Applicant should be required to establish a reporting and verification mechanism to quantify the amount of carbon sequestered. Furthermore, the Project Applicant should be required to prove additionality.¹⁰⁷

Measure Applicability:

- Overall baseline project GHG emissions inventory

Inputs:

- Amount of CO₂e sequestered (MT/year)

Baseline Method:

The Project Applicant should calculate the baseline project emissions inventory (CO₂e_{baseline}, the total baseline CO₂e emissions in MT per year) using the methods described in the baseline methodology document.

Mitigation Method:

The amount of CO₂e sequestered is subtracted from the overall project emissions inventory. Therefore, the percent GHG reduction is

¹⁰⁷ Additionality is the reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the Project. In other words, the Project should not subsidize or take credit for emissions reductions which would have occurred regardless of the Project.

Miscellaneous

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Misc-1

Carbon Sequestration

$$\text{GHG emission reduction} = \frac{\text{CO}_2\text{e}_{\text{sequestered}}}{\text{CO}_2\text{e}_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in overall GHG emissions from carbon sequestration project
CO ₂ e _{sequestered}	=	Amount of CO ₂ e sequestered (MT/year) Provided by Applicant
CO ₂ e _{baseline}	=	Total baseline CO ₂ e emissions (MT/year)

Assumptions:

Data based upon the following references:

- USDOE. Fossil Energy: Carbon Sequestration. Available online at: <http://www.fossil.energy.gov/programs/sequestration/>

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	To be determined by Applicant
All other pollutants	None

Preferred Literature:

The DOE Fossil Energy – Carbon Sequestration website describes the four core carbon sequestration technologies: geologic, carbon capture and storage, terrestrial, and novel biological and chemical pathways. The DOE website discusses current challenges and research projects associated with each of the carbon sequestration technologies, as well as the trade-offs between local environmental impacts and global environmental benefits.

Alternative Literature:

None

Other Literature Reviewed:

None

Miscellaneous

Misc-2

Off-site Mitigation

9.1.2 Establish Off-Site Mitigation

Range of Effectiveness: Varies depending on Project Applicant and projects selected. The GHG emissions reduction is subtracted from the overall baseline project emissions inventory.

Measure Description:

The Project Applicant may decide to establish GHG reduction measures similar to any of the measures discussed in this report. These reductions would take place outside of the Project Site. In order to take credit for this measure, the Project Applicant should be required to establish a method for registering and verifying the GHG emissions reduction. Furthermore, the Project Applicant should be required to prove additionality.¹⁰⁸

Measure Applicability:

- Overall baseline project GHG emissions inventory

Inputs:

- Amount of CO₂e reduced off-site (MT/year)

Baseline Method:

The Project Applicant should calculate the baseline project emissions inventory (CO₂e_{baseline}, the total baseline CO₂e emissions in MT per year) using the methods described in the baseline methodology document.

Mitigation Method:

The amount of CO₂e reduced off-site is subtracted from the overall project emissions inventory. Therefore, the percent GHG reduction is:

$$\text{GHG emission reduction} = \frac{\text{CO}_2\text{e}_{\text{reduced off-site}}}{\text{CO}_2\text{e}_{\text{baseline}}}$$

Where:

GHG emission reduction	=	Percentage reduction in overall GHG emissions from off-site mitigation
CO ₂ e _{reduced off-site}	=	Amount of CO ₂ e reduced off-site (MT/year) Provided by Applicant
CO ₂ e _{baseline}	=	Total baseline CO ₂ e emissions (MT/year)

¹⁰⁸ Additionality is the reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the Project. In other words, the Project should not subsidize or take credit for emissions reductions which would have occurred regardless of the Project.



Miscellaneous

Misc-2

Off-site Mitigation

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	To be determined by Applicant
All other pollutants	To be determined by Applicant. Reductions in criteria pollutant emissions may be achieved if the off-site mitigation involves removing or retrofitting combustion sources or reducing electricity use. ¹⁰⁹

Preferred Literature:

None

¹⁰⁹ Note that the reduction in criteria pollutant emissions may not occur in the same air basin as the project.

Miscellaneous

CEQA# MM C-3 & E-17
MP# EE-1

Misc-3

Local & Sustainable Materials

9.1.3 Use Local and Sustainable Building Materials

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Using building materials which are sourced and processed locally (i.e. close to the project site, as opposed to in another state or country) reduces transportation distances and therefore reduces GHG emissions from fuel combustion. Using sustainable building materials, such as recycled concrete or sustainably harvested wood, also contributes to GHG emissions reductions due to the less carbon-intensive nature of the production and harvesting of these materials. Unlike measures which reduce GHG emissions during the operational lifetime of a project, such as reducing building electricity and water usage, these mitigation efforts are realized prior to the actual operational lifetime of a project. Therefore, these GHG emissions are best quantified in terms of a life-cycle analysis. Life cycle analyses examine all stages of the life of a product, including raw material acquisition, manufacture, transportation, installation, use, and disposal or recycling. The Project Applicant should seek local agency guidance on comparing and/or combining operational emissions inventories and life cycle emissions inventories.

Measure Applicability:

- Life cycle emissions from building materials

Inputs:

The following information needs to be provided by the Project Applicant:

- Project location
- Material transport distance
- Material type
- Building assembly type and square footage

Preferred Literature:

Several software packages and web-based tools are available which can be used to quantify the life cycle emissions from building materials.

The Building for Environmental and Economic Sustainability (BEES) software developed by the National Institute of Standards and Technology (NIST) can calculate global warming potential (in terms of CO₂ emissions in grams per product) for a variety of building products, including a multitude of cement varieties, fabrics, tiles, glass, wood, and shelving materials. Required inputs are the type of building material (e.g. generic 100% Portland cement, generic 20% limestone cement), and transportation distance. The user can compare between different types of materials and associated transportation distances.



Miscellaneous

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Misc-3

Local & Sustainable Materials

The BEES software and user manual is available for public download here:

<http://www.bfrl.nist.gov/oae/software/bees/bees.html>

The Athena EcoCalculator for Assemblies software developed by the Athena Institute analyzes the environmental impacts of whole buildings in terms of global warming potential (in terms of CO₂e) from raw material extraction, final material manufacturing, transportation, on-site construction, maintenance, and demolition and disposal. Required inputs include the project location, assembly type (columns and beams, floor, exterior wall, interior wall, window, or roof), type of material, and square footage of material. The Athena EcoCalculator compares CO₂e emissions from the project-specific assembly to default assemblies of similar material and size. The Athena EcoCalculator is based on the more rigorous Athena Impact Estimator software, which requires detailed information about the building design including the number of columns and beams, supported span, wall height, and type of material used for all aspects. In contrast, the Athena EcoCalculator assumes default values for many of the architectural details.

A free public version of the Athena EcoCalculator is available for download here:

<http://www.athenasmi.org/tools/ecoCalculator/index.html>

Alternative Literature:

None

Other Literature Reviewed:

None

Miscellaneous

Misc-4

**BMP Agriculture &
Animal Operations**

9.1.4 Require Best Management Practices in Agriculture and Animal Operations

Miscellaneous

MP# MO-6.1

Misc-5

Environmentally
Responsible Purchasing

9.1.5 Require Environmentally Responsible Purchasing

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Requiring environmentally responsible purchasing has the potential to have a net effect of reducing GHG emissions by reducing the life cycle emissions, operating emissions, and/or transportation emissions associated with a product. Examples of environmentally responsible purchases which reduce life cycle emissions include but are not limited to: purchasing products with sustainable packaging; purchasing post-consumer recycled copier paper, paper towels, and stationary; purchasing and stocking communal kitchens with reusable dishes and utensils; choosing sustainable cleaning supplies; and leasing equipment from manufacturers who will recycle the components at their “end of life.” Examples of environmentally responsible purchases which reduce a Project’s operating emissions include choosing ENERGY STAR appliances and Water Sense-certified water fixtures; choosing electronic appliances with built in sleep-mode timers; and purchasing “green power” (e.g. electricity generated from renewables or hydropower) from the utility. Choosing locally-made and distributed products reduces the transportation distances required to move the product from the distribution or manufacturing center to the Project, and therefore reduce GHG emissions associated with the transportation vehicles.

Since the magnitude of the energy and GHG reduction depends on the purchasing strategies implemented, the expected GHG reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to encourage homeowners, commercial space tenants, and builders to make sustainable purchases and therefore reduce their contribution to GHG emissions. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:

- Purchase of consumer and business goods and appliances

Assumptions:

Data based upon the following references:

- City of Chicago and ICLEI. Chicago Green Office Challenge: Waste. Available online at: <http://www.chicagogreenofficechallenge.org/pages/waste/50.php>
- Cool California.org. Small Business Money Saving Actions: Recycle and Cut Waste. Available online at: <http://www.coolcalifornia.org/article/recycle-and-cut-waste>



Miscellaneous

MP# MO-6.1

Misc-5

Environmentally Responsible Purchasing

- Flex Your Power.org. Commercial Overview Energy Saving Tips: Office Equipment Tips. Available online at:
http://www.fypower.org/com/tools/energy_tips_results.html?tips=office
- ENERGY STAR. 2007. Putting Energy into Profits: ENERGY STAR Guide for Small Businesses. Available online at:
http://www.energystar.gov/ia/business/small_business/sb_guidebook/smallbizguide.pdf

Emission Reduction Ranges and Variables:

This is a Best Management Practice and therefore at this time there is no quantifiable reduction. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:

The Chicago Green Office Challenge, Cool California.org, and Flex Your Power.org website resources provide many examples of office and small business purchasing strategies which reduce waste and energy use. The ENERGY STAR Guide provides more details about energy-efficient appliance choices and the option to purchase renewable or clean energy from the utility for a higher cost.

Alternative Literature:

None

Other Literature Reviewed:

None

Miscellaneous

Misc-6

Innovative Strategy

9.1.6 Implement an Innovative Strategy for GHG Mitigation

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. The GHG emissions reduction may be quantifiable. If not quantifiable, this mitigation measure should be implemented as a Best Management Practice.

Measure Description:

The Project Applicant may develop a novel strategy to reduce GHG emissions at the project site or off-site. This strategy may incorporate technologies which have yet to be developed at the time of the publication of this report. In order to take quantifiable credit for this measure, the Project Applicant must provide detailed and substantial evidence showing the quantification and verification of the GHG emissions reduction. If the GHG emissions reduction is not quantifiable, it should be implemented as a Best Management Practice.

Measure Applicability:

- To be determined by Project Applicant

Inputs:

- Amount of CO₂e reduced due to Innovative Strategy
- Baseline CO₂e for applicable inventory sector

Baseline Method:

The Project Applicant should calculate the baseline CO₂e emissions associated with the applicable GHG emissions inventory sector (CO₂e_{baseline-sector}, the baseline CO₂e emissions in MT per year for the applicable sector) using the methods described in the baseline methodology document. For example, if the Innovative Strategy achieves GHG reductions by reducing building energy use, CO₂e_{baseline-sector} is the total CO₂e emissions associated with baseline building energy use.

Mitigation Method:

The amount of CO₂e reduced due to the Innovative Strategy is subtracted from applicable emissions inventory sector. Therefore, the percent GHG reduction is:

$$\text{GHG emission reduction} = \frac{\text{CO}_2\text{e}_{\text{reduced-sector}}}{\text{CO}_2\text{e}_{\text{baseline-sector}}}$$

Where:

GHG emission reduction	=	Percentage reduction in sector GHG emissions due to Innovative Strategy
CO ₂ e _{reduced-sector}	=	Amount of CO ₂ e reduced due to Innovative Strategy (MT/year)
CO ₂ e _{baseline-sector}	=	Provided by Applicant Baseline sector CO ₂ e emissions (MT/year)



Miscellaneous

Misc-6

Innovative Strategy

If the GHG emissions reduction cannot be quantified and/or verified, check with local agencies for guidance on any allowed reductions associated with implementation of Best Management Practices.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	To be determined by Applicant
All other pollutants	None

Preferred Literature:

None

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10.1.5	Implement Strategies to Reduce Urban Heat-Island Effect	455	GP-5

General Plans
GP-1

10.0 General Plans

In addition to fact sheets and BMPs, this document includes measures that are more applicable for General Plans. The following measures have substantial evidence of reductions when implemented at a General Plan level rather than a project level.

10.1 General Plans

10.1.1 Fund Incentives for Energy Efficiency

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

By funding incentives for energy-efficient choices in equipment, fixtures in buildings, or energy sources, a Project Applicant can promote reductions in GHG emissions associated with fuel combustion and electricity use. The Project Applicant may choose to contribute to an existing municipal energy fund or establish a new energy fund for the Project. The Project Applicant should check with the local air district regarding participating in established programs. These energy funds may provide financial incentives or grants for any number of energy efficiency measures including but not limited to: retrofitting or designing new buildings, parking lots, streets, and public areas with energy-efficient lighting; retrofitting or designing new buildings with low-flow water fixtures and high-efficiency appliances; retrofitting or purchasing new low-emissions equipment; purchasing electric or hybrid vehicles; and investing in renewable energy systems such as photovoltaics or wind turbines. Recipients of energy fund grants could include neighborhood developers, home and commercial space builders, homeowners, and utilities. Energy funds allow recipients flexibility in choosing efficiency strategies while still achieving the desired effects of reduced energy use and associated GHG emissions.

Since the magnitude of the energy and GHG reduction depends on the strategies selected by the energy fund recipients, the expected GHG reduction is not quantifiable at this time. Therefore, this mitigation measure should be incorporated as a Best Management Practice to encourage utilities, builders, residents, and commercial tenants to reduce their energy use and/or choose cleaner energy, and therefore reduce their contribution to GHG emissions. The Project Applicant could take quantitative credit for this mitigation measure if detailed and substantial evidence were provided.

Measure Applicability:

- GHG emissions from energy use (fuel combustion and electricity use)

Assumptions:

Data based upon the following references:

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General Plans

GP-1

- City of Ann Arbor. Energy Office: Energy Fund. Available online at: http://www.a2gov.org/government/publicservices/systems_planning/energy/Pages/EnergyFund.aspx
- Go Solar California. California Solar Initiative. Available online at: <http://www.gosolarcalifornia.org/csi/index.html>
- USDOE. Database of State Initiatives for Renewables and Efficiency: California. Available online at: <http://www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=CA>
- California Clean Energy Fund. About Us. Available online at: <http://www.calcef.org/about.htm>

Emission Reduction Ranges and Variables:

This is a Best Management Practice and therefore there is no quantifiable reduction at this time. Check with local agencies for guidance on any allowed reductions associated with implementation of best management practices.

Preferred Literature:

The City of Ann Arbor's Energy Fund provides a good example of a municipal general energy fund which provides grants for a wide variety of energy efficiency and renewable energy investments. The California Solar Initiative and the Energy Efficient Appliance Rebate Program (found on the DOE Database of State Initiatives for Renewables and Efficiency) are examples of California state energy funds which incentivize specific types of purchases. The DOE database provides a listing of many more California municipal and local programs.

Alternative Literature:

None

Other Literature Reviewed:

- The Energy Foundation. Programs: Power. Available online at: <http://www.ef.org/programs.cfm>

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CEQA# MM D-18
MP# LU-2.1.4

GP-2

10.1.2 Establish a Local Farmer's Market

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Establishing a local farmer's market has the potential to reduce greenhouse gas emissions by providing project residents with a more local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food and the consumers to grocery stores and supermarkets. If the food sold at the local farmer's market is produced organically, it can also contribute to greenhouse gas reductions by displacing carbon-intensive food production practices. As discussed in more detail below, these emissions reductions cannot be reasonably quantified at this time because they are based on several undefined parameters: the relative locations of the farmer's market, supermarket, and supermarket produce suppliers; the carbon intensity of food production practices; and the role of the farmer's market in a development, such as whether it supplements trips to the grocery store or completely displaces them.

Measure Applicability:

- Number of trips to supermarket and vehicle miles traveled
- Life cycle emissions of food production

Discussion:

Potential greenhouse gas emissions from establishing a local farmer's market can be divided into two types: emissions reductions from transportation and emissions reductions from food production practices. The transportation of food from a field to a store and the transportation of consumers from their homes to a store both contribute to greenhouse gas emissions. In many cases, especially in urban areas, a local farmer's market will reduce emissions associated with the distribution of food from the field to the consumer, since the farms represented at the local farmer's market are theoretically closer to the consumer than the farms which produce most of the food found at supermarkets and grocery stores. However, California has a large number of farms and orchards and in some cases the farms represented at a local farmer's market may not be different than those represented at the neighborhood grocery store. If a consumer obtains produce from a local farmer's market when they would otherwise drive a farther distance to purchase produce from a grocery store, the trip to the grocery stores is displaced, VMT is reduced, and GHG emissions reductions are achieved. However, if a consumer drives to the farmer's market and then to the grocery store (for example, to purchase food which the farmer's market cannot provide), the trip to the farmer's market is made in addition to the trip to the grocery store. Thus, an additional trip is made, VMT

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GP-2

is added, and greenhouse gas emissions are actually increased. It is unclear how local farmer's markets affect the food purchasing behavior of consumers, and therefore the effect of a farmer's market on transportation greenhouse gas emissions is not quantifiable at this time. The carbon intensity of food production practices also contributes to greenhouse gas emissions; however, these emissions are accounted for in the life cycle analysis of the food and cannot be directly compared to a development's operational greenhouse gas emissions inventory (such as the transportation emissions detailed above). If food at a local farmer's market is produced organically, it is likely that less carbon-intensive practices were used than at the large-scale farms and orchards which produce most food found at grocery stores and supermarkets. Examples of carbon-intensive gardening practices include heated greenhouses and the heavy use of fertilizers and pesticides derived from fossil fuels. Local farms which do not practice organic or sustainable farming may employ these more carbon-intensive practices. Thus, the magnitude of the life-cycle greenhouse gas emissions is difficult to quantify and compare to operational inventories.

Preferred Literature:

None

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10.1.3 Establish Community Gardens

Range of Effectiveness: Varies depending on Project Applicant and strategies selected. Best Management Practice.

Measure Description:

Establishing a community garden has the potential to reduce greenhouse gas emissions by providing project residents with a local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food and the consumers to grocery stores and supermarkets. Community gardens can also contribute to greenhouse gas reductions by displacing carbon-intensive food production practices. As discussed in more detail below, these emissions reductions cannot be reasonably quantified at this time because they are based on several undefined parameters: the relative locations of the community garden, supermarket, and supermarket produce suppliers; the carbon intensity of gardening and farming practices; and the role of a community garden in a development, such as whether it supplements trips to the grocery store or completely displaces them.

Measure Applicability:

- Number of trips to supermarket and vehicle miles traveled
- Life cycle emissions of food production

Discussion:

Potential greenhouse gas emissions from establishing a community garden can be divided into two types: emissions reductions from transportation and emissions reductions from food production practices. The transportation of food from a field to a store and the transportation of consumers from their homes to a store both contribute to greenhouse gas emissions. In most cases a community garden will reduce emissions associated with the distribution of food from the field to the consumer, since with community gardens the food goes directly from the field to the consumer, while in grocery stores and supermarkets the path is more likely field to regional distribution center to store to consumer. If a consumer obtains produce from a community garden when they would otherwise drive a farther distance to purchase produce from a grocery store, the trip to the grocery stores is displaced, VMT is reduced, and GHG emissions reductions are achieved. However, if a consumer drives to the community garden and then to the grocery store (for example, to purchase food which the community garden cannot provide), the trip to the community garden is made in addition to the trip to the grocery store. Thus, an additional trip is made, VMT is added, and greenhouse gas emissions are actually increased. Furthermore, if community gardens displace backyard gardens, they increase transportation emissions. It is unclear how community gardens affect the food purchasing behavior of consumers, and therefore the effect of a community garden on transportation greenhouse gas emissions is not quantifiable at

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this time. The carbon intensity of food production practices also contributes to greenhouse gas emissions; however, these emissions are accounted for in the life cycle analysis of the food and cannot be directly compared to a development's operational greenhouse gas emissions inventory (such as the transportation emissions detailed above). Community gardens are likely to produce food using less carbon-intensive practices than the large-scale farms and orchards which produce most food found at grocery stores and supermarkets. Examples of carbon-intensive gardening practices include heated greenhouses and the heavy use of fertilizers and pesticides derived from fossil fuels; these practices are not likely to be used at community gardens. Although these qualitative conclusions can be drawn, the magnitude of the life-cycle greenhouse gas emissions is difficult to quantify and compare to operational inventories.

Preferred Literature:

None



General Plans

CEQA# MM T-14
MP# COS-3.2

GP-4

10.1.4 Plant Urban Shade Trees

Range of Effectiveness: The reduction in GHG emissions is not quantifiable at this time, therefore this mitigation measure should be implemented as a Best Management Practice. If the study data were updated to account for Title 24 standards, the GHG emissions reductions could be quantified but would vary based on location, building type, and building size.

Measure Description:

Planting shade trees around buildings has been shown to effectively lower the electricity cooling demand of buildings by blocking incident sunlight and reducing heat gain through windows, walls, and roofs. Deciduous trees with large canopies are a desirable choice of shade tree because they provide shade in the warm months and shed their leaves in the winter months to allow sunlight to pass through and warm the building. By reducing cooling demand, shade trees help reduce electricity demand from the local utility and therefore reduce GHG emissions which would otherwise be emitted during the production of that electricity.

A study entitled “Calculating energy-saving potentials of heat-island reduction strategies” conducted by the Lawrence Berkeley National Laboratory (LBNL) Heat Island Group provides a method to quantify reductions in electricity use from planting shade trees around residences, offices, and retail stores. The electricity reductions are based on the LBNL model which assumes 4 shade trees are planted around residences, 8 trees are planted around offices, and 10 trees are planted around retail stores. The LBNL model is also based on electricity use data for two building stocks: Pre-1980 buildings (buildings constructed prior to 1980) and 1980+ buildings (buildings constructed on or after 1980). Other assumptions, including the geometry of the modeled trees and sunlight transmittance, are detailed in Section 2.5 of the study. This mitigation measure describes how to estimate greenhouse gas emissions reductions from planting shade trees based on the LBNL data. Since the model is based on electricity data for Pre-1980 and 1980+ buildings¹¹⁰ it does not incorporate electricity use improvements due to the California 2001, 2005, or 2008 Title 24 measures. Given that buildings constructed in 2001 or later incorporate Title 24 electricity efficiency improvements, the electricity savings reported in the LBNL study are overestimates of the savings that would actually be achieved for these newer buildings.¹¹¹

¹¹⁰ This data for these buildings is based on U.S. Department of Energy and California Energy Commission studies conducted in 1987 through 2001.

¹¹¹ The CEC 2003 Impact Analysis Report estimates a state-average 14.9%-26% savings in electricity use for cooling in residential buildings and 6.7% savings in electricity use for cooling in non-residential



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GP-4

While the electricity savings in the study overestimates savings for newer buildings, the data does show that electricity savings (and associated greenhouse gas emissions savings) from planting shade trees are real. A follow-up study which uses similar methodologies with models updated with the Title 24 standards would provide data which could be used to more accurately quantify electricity savings for new buildings.

Measure Applicability:

- Electricity use
- Limitation: It takes several years for trees to grow to the height necessary to provide shade to a building. Furthermore, without deed restrictions, the presence of shade trees around a building may not be permanent, as a new owner may decide to remove the trees or not replace them if they die.

Inputs:

The following information needs to be provided by the Project Applicant:

- Type of building (residential, office, or retail store)
- Square footage of roof
- Heating Degree Days (HDD) or Cooling Degree Days (CDD) of Project location

Baseline Method:

The CEC Residential Appliance Saturation Survey (RASS) and California Commercial Energy Use Survey (CEUS) datasets can be used to calculate the baseline electricity for building cooling. The data is available for different climate zones in California and electricity use from cooling alone can be extracted. The methodology for using RASS and CEUS to calculate $GHG_{baseline}$ is described in the baseline document.

Mitigation Method:

The electricity savings from reduced cooling demand are based on the location of the building. Table 4 of the LBNL study provides a list of cities and their HDD and CDD values. If a project's location is not listed, the Project Applicant should choose a representative city with climate similar to that of the project. Alternatively, the Project Applicant could determine the HDD and CDD of the project location from local meteorological data.

buildings due to the 2005 update to the 2001 Title 24 standards. The CEC 2007 Impact Analysis Report estimates a state-average 19.7%-22.7% savings in overall electricity use for residential buildings and a 8.3% savings in electricity use for cooling in non-residential buildings due to the 2008 update to the 2005 Title 24 standards.

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Tables 6 through 16 of the LBNL study show the expected electricity savings (in kWh per 1000 sqft of roof) based on the following parameters:

- Building type (residential, office, or retail store)
- Climate method (HDD or CDD – either can be used)
- Heating method (Gas heated-buildings or electric-heated buildings)

The Project Applicant should select data based on the appropriate parameters above. The entry corresponding to the “Shade tree savings” row and “1980+” column will provide the electricity savings in kWh per 1000 sqft of roof for the specified building type, climate method, and heating method. Note that value is an overestimate of savings for buildings which were manufactured under Title 24 standards.

Then the reduction in GHG emissions is calculated as follows:

$$GHG_{\text{reduction}} = SF \times ElecSavings \times Utility$$

Where

GHG_{reduction} = Reduction in GHG emissions from planting shade trees (MT)

SF = Sqft of roof

Provided by Applicant

ElecSavings = Electricity savings (kWh / sqft roof)

From Tables 6 through 16 of LBNL study

Utility = Carbon intensity of local utility (MT CO₂e / kWh)

From Table below

Power Utility	Carbon-Intensity (lbs CO ₂ e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{Percent reduction in GHG emissions} = GHG_{\text{reduction}} / GHG_{\text{baseline}}$$

Since the Utility term is a factor of both GHG_{reduction} and GHG_{baseline}, the percent reduction in GHG emissions does not depend on the value of Utility.

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Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	<p>The following emissions reductions reflect the implementation of three heat island reduction strategies (installing reflective roofs, planting shade trees, and using high-albedo pavements) for the 1980+ stock buildings. The reduction from planting shade trees around new buildings is expected to be smaller than the estimate below. Additionally, savings are expected to be smaller for new buildings due to the Title 24 standards.</p> <ul style="list-style-type: none"> • 20% for residential buildings • 5-12% for office buildings • 10-17% for retail buildings
All other pollutants	Same as above ¹¹²

Assumptions:

Data based upon the following reference:

- H. Akbari, S. Konopacki. Lawrence Berkeley National Laboratory. 2005. Calculating Energy-Saving-Potentials of Heat-Island Reduction Strategies. Journal of Energy Policy. Volume 33, p. 721-756.

Preferred Literature:

The LBNL study conducted by Akbari and Konopacki of the Heat Island Group modeled energy savings from shade trees for residential, office, and retail building types. The model accounted for differences in climate by modeling in a range of heating-degree-days and cooling-degree days, and compared a basecase (building with no external shading) to a mitigated case (building with 4, 8, and 10 shade trees, depending on the building type). However, the study is based on pre-2001 data and does not account for updates to California's Title 24 standards. Furthermore, the model assumes a specific number of shade trees planted at specific orientations.

Alternative Literature:

- CCAR. 2010. Urban Forest Project Protocol Version 1.1. Available online at: <http://www.climateactionreserve.org/how/protocols/adopted/urban-forest/current-urban-forest-project-protocol/>

Section D.3 of the protocol describes a method to quantify the reductions in cooling and heating demand due to the planting of shade trees. Computer simulations incorporating

¹¹² Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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building, climate, and shading effects were used to calculate the change in unit energy consumption (UEC) on a per tree basis. Total change in energy use is calculated by multiplying the change in UEC per tree by the total number of trees. Buildings were modeled in three stocks with similar building characteristics: buildings constructed prior to 1950, buildings constructed between 1950 and 1980, and buildings constructed after 1980. As with the primary reference above, the data does not account for electricity efficiency improvements due to California's Title 24 standards.

Other Literature Reviewed:

- E. G. McPherson, J. R. Simpson. USDA Forest Service. 2003. Potential Energy Savings in Buildings by an Urban Tree Planting Programme in California. *Journal of Urban Forestry & Urban Greening*. Volume 2, p. 73-86.
- H. Akbari. Lawrence Berkeley National Laboratory. 2002. Shade Trees Reduce Building Energy Use and CO₂ Emissions from Power Plants. *Journal of Environmental Pollution*. Volume 116, p. 119-126.
- J. R. Simpson. Department of Environmental Horticulture at the University of California. 2002. Improved Estimates of Tree-Shade Effects on Residential Energy Use. *Journal of Energy and Buildings*. Volume 34, p. 1067-1076.

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10.1.5 Implement Strategies to Reduce Urban Heat-Island Effect

Range of Effectiveness: The reduction in GHG emissions is not quantifiable at this time, therefore this mitigation measure should be implemented as a Best Management Practice. If the study data were updated to account for Title 24 standards, the GHG emissions reductions could be quantified but would vary based on location, building type, and building size.

Measure Description:

The urban heat island effect is the phenomenon in which a metropolitan area is warmer than its surrounding rural areas due to increased land surface which retains heat, such as concrete, asphalt, metal, and other materials found in buildings and pavements. This warming effect causes warmer locations, such as many cities in California, to require more energy for air conditioning and refrigeration than the surrounding rural areas. Higher energy requirements in turn result in higher CO₂ emissions from the generation of this energy.

Three strategies have been shown to have a positive impact on reducing localized temperatures and reducing the electricity demand for building cooling. These strategies are planting urban shade trees, installing reflective roofs, and using light-colored or high-albedo¹¹³ pavements and surfaces. Planting shade trees around buildings and installing reflective roofs have both been found to result in direct electricity savings for buildings. The per building direct electricity savings from planting shade trees is discussed in a separate mitigation measure. Reflective roofs are covered under Title 24 Part 6 and the electricity savings is therefore incorporated in savings due to Title 24. The combination of the three strategies, however, has been shown to have a city-wide effect: a reduction in ambient air temperature. This reduction in air temperature results in buildings requiring less electricity for cooling, and is quantified as indirect savings in electricity use. The savings can be quantified on a per-building basis or on a city-wide basis.

A study entitled “Calculating energy-saving potentials of heat-island reduction strategies” conducted by the Lawrence Berkeley National Laboratory (LBNL) Heat Island Group provides a method to quantify per-building reductions in electricity use from implementing these three strategies on a city-wide scale. In addition, the study reports modeled city-wide electricity savings. The electricity reductions are based on a LBNL model with certain assumptions about the number and orientation of shade trees

¹¹³ The albedo ratio of a surface represents how strongly the surface reflects sunlight. Pavements with higher albedo ratios reflect more sunlight and therefore retain less heat.

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and the albedo values of roofs and pavements. Per-building electricity savings are also based on for two building stocks: Pre-1980 buildings (buildings constructed prior to 1980) and 1980+ buildings (buildings constructed on or after 1980).

This mitigation measure describes how to estimate greenhouse gas emissions reductions from implementing heat-island effect reduction strategies as reported in the LBNL study. Since the LBNL model is based on electricity data for Pre-1980 and 1980+ buildings¹¹⁴ it does not incorporate electricity use improvements due to the California 2001, 2005, or 2008 Title 24 measures. Given that buildings constructed in 2001 or later incorporate Title 24 electricity efficiency improvements, the electricity savings reported in the LBNL study are overestimates of the savings that would actually be achieved for these newer buildings.¹¹⁵

While the electricity savings in the study overestimates savings for newer buildings, the data does show that electricity savings (and associated greenhouse gas emissions savings) from planting shade trees are real. A follow-up study which uses similar methodologies with models updated with the Title 24 standards would provide data which could be used to more accurately quantify electricity savings for new buildings.

Measure Applicability:

- Electricity use
- Limitation: It takes several years for trees to grow to the height necessary to provide shade to a building. Furthermore, without deed restrictions, the presence of shade trees around a building may not be permanent, as a new owner may decide to remove the trees or not replace them if they die.
- Limitation: it is assumed that the heat-island effect reduction strategies are implemented on a city-wide scale.

Inputs:

The following information needs to be provided by the Project Applicant:

- Type of building (residential, office, or retail store)
- Square footage of roof

¹¹⁴ This data for these buildings is based on U.S. Department of Energy and California Energy Commission studies conducted in 1987 through 2001.

¹¹⁵ The CEC 2003 Impact Analysis Report estimates a state-average 14.9%-26% savings in electricity use for cooling in residential buildings and 6.7% savings in electricity use for cooling in non-residential buildings due to the 2005 update to the 2001 Title 24 standards. The CEC 2007 Impact Analysis Report estimates a state-average 19.7%-22.7% savings in overall electricity use for residential buildings and a 8.3% savings in electricity use for cooling in non-residential buildings due to the 2008 update to the 2005 Title 24 standards.

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- Heating Degree Days (HDD) or Cooling Degree Days (CDD) of Project location

Baseline Method:

The CEC Residential Appliance Saturation Survey (RASS) and California Commercial Energy Use Survey (CEUS) datasets can be used to calculate the baseline electricity for building cooling. The data is available for different climate zones in California and electricity use from cooling alone can be extracted. The methodology for using RASS and CEUS to calculate $GHG_{baseline}$ is described in the baseline document.

Mitigation Method:

The electricity savings from reduced cooling demand are based on the location of the building. Table 4 of the LBNL study provides a list of cities and their HDD and CDD values. If a project's location is not listed, the Project Applicant should choose a representative city with climate similar to that of the project. Alternatively, the Project Applicant could determine the HDD and CDD of the project location from local meteorological data.

Tables 6 through 16 of the LBNL study show the expected electricity savings (in kWh per 1000 sqft of roof) based on the following parameters:

- Building type (residential, office, or retail store)
- Climate method (HDD or CDD – either can be used)
- Heating method (Gas heated-buildings or electric-heated buildings)

The Project Applicant should select data based on the appropriate parameters above. The entry corresponding to the "Indirect Savings" row and "1980+" column will provide the electricity savings in kWh per 1000 sqft of roof for the specified building type, climate method, and heating method. Note that value is an overestimate of savings for buildings which were manufactured under Title 24 standards.

Then the reduction in GHG emissions is calculated as follows:

$$GHG_{reduction} = SF \times ElecSavings \times Utility$$

Where

$GHG_{reduction}$	=	Reduction in GHG emissions from implementing heat island effect reduction strategies on a city-wide scale (MT)
SF	=	Sqft of roof Provided by Applicant
ElecSavings	=	Electricity savings (kWh / sqft roof) From Tables 6 through 16 of LBNL study
Utility	=	Carbon intensity of local utility (MT CO ₂ e / kWh)



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From Table below

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Power Utility	Carbon-Intensity (lbs CO ₂ e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

Therefore:

$$\text{Percent reduction in GHG emissions} = \text{GHG}_{\text{reduction}} / \text{GHG}_{\text{baseline}}$$

Since the Utility term is a factor of both $\text{GHG}_{\text{reduction}}$ and $\text{GHG}_{\text{baseline}}$, the percent reduction in GHG emissions does not depend on the value of Utility.

City-Wide GHG reductions

The LBNL study estimates that city-wide reductions in electricity use (and associated GHG emissions) range from about 10-20%. This range is based on the percent indirect savings modeled for five pilot cities: Houston, Baton Rouge, Chicago, Sacramento, and Salt Lake City, as reported in Figure 2 of the LBNL study.

Emission Reduction Ranges and Variables:

Pollutant	Category Emissions Reductions
CO ₂ e	The following per-building emissions reductions reflect the implementation of three heat island reduction strategies (installing reflective roofs, planting shade trees, and using high-albedo pavements) for the 1980+ stock buildings. Actual savings are expected to be lower for new buildings due to the Title 24 standards. <ul style="list-style-type: none"> • 20% for residential buildings • 5-12% for office buildings • 10-17% for retail buildings
All other pollutants	Same as above ¹¹⁶

¹¹⁶ Criteria air pollutant emissions may also be reduced due to the reduction in energy use; however, the reduction may not be in the same air basin as the project.

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Assumptions:

Data based upon the following reference:

- H. Akbari, S. Konopacki. Lawrence Berkeley National Laboratory. 2005. Calculating Energy-Saving-Potentials of Heat-Island Reduction Strategies. Journal of Energy Policy. Volume 33, p. 721-756.
- S. Konopacki, H. Akbari. Lawrence Berkeley National Laboratory. 2000. Energy Savings Calculations for Heat Island Reduction Strategies in Baton Rouge, Sacramento, and Salt Lake City. LBNL 42890.

Preferred Literature:

The LBNL study conducted by Akbari and Konopacki of the Heat Island Group modeled energy savings from shade trees for residential, office, and retail building types. The model accounted for differences in climate by modeling in a range of heating-degree-days and cooling-degree days, and compared a basecase (building with no external shading) to a mitigated case (building with 4, 8, and 10 shade trees, depending on the building type). However, the study is based on pre-2001 data and does not account for updates to California's Title 24 standards. Furthermore, the model assumes a specific number of shade trees planted at specific orientations.

Alternative Literature:

None

Other Literature Reviewed:

Lawrence Berkeley National Laboratory. Heat Island Group: Benefits of Cooler Pavements. Available online at: <http://eetd.lbl.gov/HeatIsland/Pavements/Overview/Pavements99-01.html>. Accessed March 2010.

Lawrence Berkeley National Laboratory. Heat Island Group: The Cost of Hot Pavements. Available online at: <http://heatisland.lbl.gov/Pavements/Cost.html>. Accessed March 2010.

USEPA. Draft. Reducing Urban Heat Islands: Compendium of Strategies, Cool Pavements. Available online at: <http://epa.gov/heatisland/resources/pdf/CoolPavesCompendium.pdf>



Appendix A

List of Acronyms and Glossary of Terms

List of Acronyms

ACM	alternative calculation method
AF	acre feet
B20	biodiesel (20%)
BOD	biochemical oxygen demand
BMP	best management practice
C	carbon
CAFE	corporate average fuel economy
CAPCOA	California Air Pollution Control Officers Association
CAR	Climate Action Registry
CARB	California Air Resources Board
CCAR	California Climate Action Registry
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CEUS	California Commercial End-Use Survey
CGBSC	California Green Building Standards Code
CH ₄	methane
CHP	combined heat and power
CIWMB	California Integrated Waste Management Board
CNG	compressed natural gas
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
DE	destruction efficiency
DEIR	Draft Environmental Impact Report
DU	dwelling unit
EF	emission factor
EIA	United States Energy Information Administration
EIR	Environmental Impact Report
EMFAC	on-road vehicle emission factors model
ET ₀	reference evapotranspiration
ETWU	estimated total water use
FCZ	forecasting climate zone
GHG	greenhouse gas
GP	General Plan
GRP	General Reporting Protocol
GWP	global warming potential
HA	hydrozone area
HHV	higher heating value
hp	horsepower
HVAC	heating, ventilating, and air conditioning
IE	irrigation efficiency
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
ITS	intelligent transportation systems
kBTU	thousand British thermal units
kW	kilowatt
kWh	kilowatt-hour
kWh/yr	kilowatt-hours/year
lbs	pounds



Appendix A

LA	landscape area
LADWP	Los Angeles Department of Water and Power
LCA	life cycle assessment
LDA	light-duty auto
LDT	light-duty truck
LED	light-emitting diode
LFM	landfill methane
LNG	liquefied natural gas
LPG	liquefied petroleum gas
MAWA	maximum applied water allowance
MMBTU	million British thermal units
MSW	mixed solid waste
MTCE	metric tonnes carbon equivalent
N ₂ O	nitrous oxide
NO _x	nitrogen oxides
NRDC	Natural Resources Defense Council
NREL	National Renewable Energy Laboratory
OLED	organic light-emitting diode
OFFROAD	off-road vehicle emission factors model
PF	plant factor
PG&E	Pacific Gas and Electric
PM	particulate matter
PUP	Power/Utility Protocol
RASS	Residential Appliance Saturation Survey
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SDGE	San Diego Gas and Electric
SLA	special landscape area
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
scf	standard cubic feet
SHP	separate heat and power
SO ₂	sulfur dioxide
sqft	square feet
TDM	transportation demand management
TDV	time dependent valuation
TOD	transit-oriented development
tonnes	metric tonnes; 1,000 kilograms
TRU	truck refrigeration unit
URBEMIS	Urban Emissions Model
US	United States
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
VCAPCD	Ventura County Air Pollution Control District
VTPI	Victoria Transport Policy Institute
VMT	vehicle miles traveled
VTR	vehicle trip reduction
WARM	Waste Reduction Model
WMO	World Meteorological Organization
yr	year

Glossary of Terms

Alternative Calculation Method

Software used to demonstrate compliance with the California Building Energy Efficiency Standards (Title 24). The software must comply with the requirements listed in the Alternative Calculation Method Approval Manual.

Additionality^a

The reduction in emissions by sources or enhancement of removals by sinks that is additional to any that would occur in the absence of the project. The project should not subsidize or take credit for emissions reductions which would have occurred regardless of the project.

Albedo^a

The fraction of solar radiation reflected by a surface or object, often expressed as a ratio or fraction. Snow covered surfaces have a high albedo; the albedo of soils ranges from high to low; vegetation covered surfaces and oceans have a low albedo. The Earth's albedo varies mainly through varying cloudiness, snow, ice, leaf area, and land cover changes. Paved surfaces with high albedos reflect solar radiation and can help reduce the urban heat island effect.

Below Market Rate Housing

Housing rented at rates lower than the market rate. Below market rate housing is designed to assist lower-income families. When below market rate housing is provided near job centers or transit, it provides lower income families with desirable job/housing match or greater opportunities for commuting to work through public transit.

Biochemical Oxygen Demand

Represents the amount of oxygen that would be required to completely consume the organic matter contained in wastewater through aerobic decomposition processes. Under the same conditions, wastewater with higher biochemical oxygen demand (BOD) concentrations will generally yield more methane than wastewater with lower BOD concentrations. BOD₅ is a measure of BOD after five days of decomposition.

Biogenic Emissions^b

Carbon dioxide emissions produced from combusting a variety of biofuels, such as biodiesel, ethanol, wood, wood waste and landfill gas.

Carbon Dioxide Equivalent

A measure for comparing carbon dioxide with other greenhouse gases. Tonnes carbon dioxide equivalent is calculated by multiplying the tonnes of a greenhouse gas by its associated global warming potential.

California Environmental Quality Act

A statute passed in 1970 that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

Carbon Neutral Power

A power generation system which has net zero carbon emissions. Examples of existing carbon neutral power systems are photovoltaics, wind turbines, and hydropower systems.



Carbon Sink

Any process or mechanism that removes carbon dioxide from the atmosphere. A forest is an example of a carbon sink, because it sequesters carbon dioxide from the atmosphere.

“Carrot”

The purpose of a carrot is to provide an incentive which encourages a particular action. Parking cash-out would be considered a “carrot” since the employee receives a monetary incentive for not driving to work, but is not punished for maintaining status quo.

Combined Heat and Power

Also known as cogeneration. Combined heat and power is the generation of both heat and electricity from the same process, such as combustion of fuel, with the purpose of utilizing or selling both simultaneously. In combined heat and power systems, the thermal energy byproducts of a process are captured and used, where they would be wasted in a separate heat and power system. Examples of combined heat and power systems include gas turbines, reciprocating engines, and fuel cells.

Compact Infill

A Project which is located within or contiguous with the central city. Examples may include redevelopment areas, abandoned sites, or underutilized older buildings/sites.

Climate Zone

Geographic area of similar climatic characteristics, including temperature, weather, and other factors which affect building energy use. The California Energy Commission identified 16 Forecasting Climate Zones (FCZs) for use in the CEUS and RASS analyses. The designation of these FCZs was based in part on the utility service area.

Cordon Pricing

Tolls charged for entering a particular area (a “cordon”), such as a downtown.

Density

The amount of persons, jobs, or dwellings per unit of land area. This is an important metric for determining traffic-related parameters.

Destination Accessibility

A measure of the number of jobs or other attractions reachable within a given travel time. Destination accessibility tends to be highest at central locations and lowest at peripheral ones.

Efficacy

The capacity to produce a desired effect.

ENERGY STAR

A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy which sets national standards for energy efficient consumer products. ENERGY STAR certified products are guaranteed to meet the efficiency standards specified by the program.

Elasticity

The percentage change of one variable in response to a percentage change in another variable. Elasticity = percent change in variable A / percent change in variable B (where the

Appendix A

change in B leads to the change in A). For example, if the elasticity of VMT with respect to density is -0.12, this means a 100% increase in density leads to a 12% decrease in VMT.

Evapotranspiration^c

The loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.

General Plan

A set of long-term goals and policies that guide local land use decisions. The 2003 *General Plan Guidelines* developed by the California Office of Planning and Research provides advice on how to write a general plan that expresses a community's long-term vision, fulfills statutory requirements, and contributes to creating a great community.

Global Warming Potential^b

The ratio of radiative forcing that would result from the emission of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a fixed period of time.

Graywater

Non-drinkable water that can be collected and reused onsite for irrigation, flushing toilets, and other purposes. This water has not been processed through a waste water treatment plant.

Greenhouse Gas

For the purposes of this report, greenhouse gases are the six gases identified in the Kyoto Protocol: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Headway

The amount of time (in minutes) that elapses between two public transit vehicles servicing a given route and given line. Headways for buses and rail are generally shorter during peak periods and longer during off-peak periods. Headway is the inverse of frequency (headway = 1/frequency), where frequency is the number of arrivals over a given time period (i.e. buses per hour).

Intelligent Transportation System

A broad range of communications-based information and electronics technologies integrated into transportation system infrastructure and vehicles to relieve congestion and improve travel safety.

Job Center

An area with a high degree and density of employment.

Kilowatt Hour

A unit of energy. In the U.S., the kilowatt hour is the unit of measure used by utilities to bill consumers for energy use.

Land Use Index

Measures the degree of land use mix of a development. An index of 0 indicates a single land use while 1 indicates a full mix of uses.

Lumen

A unit of luminous flux. A measure of the brilliance of a source of visible light, or the power of light perceived by the human eye.

Master Planned Community

Large communities developed specifically incorporating housing, office parks, recreational area, and commercial centers within the community. Master planned communities tend to encompass a large land area with the intent of being self-sustaining. Many master planned communities may have lakes, golf courses, and large parks.

Mixed Use

A development that incorporates more than one type of land use. For example, a small mixed use development may have buildings with ground-floor retail and housing on the floors above. A larger mixed use development will locate a variety of land uses within a short proximity of each other. This may include integrating office space, shopping, parks, and schools with residential development. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial/institutional locations (and vice versa).

Ordinance

A local law usually found in municipal code.

Parking Spillover

A term used to describe the effects of implementing a parking management strategy in a sub-area that has unintended consequences of impacting the surrounding areas. For example, assume parking meters are installed on all streets in a commercial/retail block with no other parking strategies implemented. Customers will no longer park in the metered spots and will instead “spillover” to the surrounding residential neighborhoods where parking is still unrestricted.

Photovoltaic^c

A system that converts sunlight directly into electricity using cells made of silicon or other conductive materials (solar cells). When sunlight hits the cells, a chemical reaction occurs, resulting in the release of electricity.

Recycled Water

Non-drinkable water that can be reused for irrigation, flushing toilets, and other purposes. It has been processed through a wastewater treatment plant and often needs to be redistributed.

Ride Sharing

Any form of carpooling or vanpooling where additional passengers are carried on the trip. Ride-sharing can be casual and formed independently or be part of an employer program where assistance is provided to employees to match up commuters who live in close proximity of one another.

Appendix A

Renewable Energy^a

Energy sources that are, within a short time frame relative to the Earth's natural cycles, sustainable, and include non-carbon technologies such as solar energy, hydropower, and wind, as well as carbon-neutral technologies such as biomass.

Self Selection

When an individual selects himself into a group.

Separate Heat and Power

The typical system for acquiring heat and power. Thermal energy and electricity are generated and used separately. For example, heat is generated from a boiler while electricity is acquired from the local utility. Separate heat and power systems are used as the baseline of comparison for combined heat and power systems.

Sequestration^a

The process of increasing the carbon content of a carbon reservoir other than the atmosphere. Biological approaches to sequestration include direct removal of carbon dioxide from the atmosphere through afforestation, reforestation, and practices that enhance soil carbon in agriculture. Physical approaches include separation and disposal of carbon dioxide from flue gases or from processing fossil fuels to produce hydrogen- and carbon dioxide-rich fractions and longterm storage in underground in depleted oil and gas reservoirs, coal seams, and saline aquifers.

“Stick”

The purpose of a stick is to establish a penalty for a status quo action. Workplace parking pricing would be considered a “stick” since the employee is now monetarily penalized for driving to work.

Suburban

An area characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside of the central city (a suburb).

Suburban Center

The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb.

Title 24

Title 24 Part 6 is also known as the California Building Energy Efficiency Standard, which regulates building energy efficiency standards. Regulated energy uses include space heating and cooling, ventilation, domestic hot water heating, and some hard-wired lighting. Title 24 determines compliance by comparing the modeled energy use of a 'proposed home' to that of a minimally Title 24 compliant 'standard home' of equal dimensions. Title 24 focuses on building energy efficiency per square foot; it places no limits upon the size of the house or the actual energy used per dwelling unit. The current Title 24 standards were published in 2008.

Transit-Oriented Development

A development located near and specifically designed around a rail or bus station. Proximity alone does not characterize a development as transit-oriented. The development and surrounding neighborhood should be designed for walking and bicycling and parking management strategies should be implemented. The development should be located within a short walking distance to a high-quality, high frequency, and reliable bus or rail service.

Transportation Demand Management

Any transportation strategy which has an intent to increase the transportation system efficiency and reduce demand on the system by discouraging single-occupancy vehicle travel and encouraging more efficient travel patterns, alternative modes of transportation such as walking, bicycling, public transit, and ridesharing. TDM measures should also shift travel patterns from peak to off-peak hours and shift travel from further to closer destinations.

Transit Ridership

The number of passengers who ride in a public transportation system, such as buses and subways.

Tree and Grid Network

Describes the layout of streets within and surrounding a project. Streets that are characterized as a tree network actually look like a tree and its branches. Streets are not laid out in any uniform pattern, intersection density is low, and the streets are less connected. In a grid network, streets are laid out in a perpendicular and parallel grid pattern. Streets tend to intersect more frequently, intersection density is higher, and the streets are more connected.

Urban

An area which is located within the central city with higher density of land uses than you would find in the suburbs. It may be characterized by multi-family housing and located near office and retail.

Urban Heat Island Effect

The phenomenon in which a metropolitan area is warmer than its surrounding rural areas due to increased land surface which retains heat, such as concrete, asphalt, metal, and other materials found in buildings and pavements.

Vehicle Miles Traveled

The number of miles driven by vehicles. This is an important traffic parameter and the basis for most traffic-related greenhouse gas emissions calculations.

Vehicle Occupancy

The number of persons in a vehicle during a trip, including the driver and passengers.

Notes:

^a Definition adapted from: IPCC. 2001. Third Assessment Report: Climate Change 2001 (TAR). Annex B: Glossary of Terms. Available online at:
<http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>

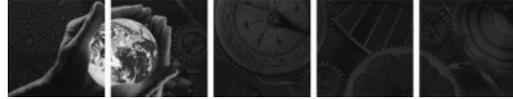
^b Definition adapted from: CCAR. 2009. General Reporting Protocol, Version 3.1. Available online at:
http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf

^c Definition adapted from: USEPA. 2010. Greening EPA Glossary. Available online at:
<http://www.epa.gov/oaintrnt/glossary.htm>



Appendix B

Greenhouse Gas Mitigation Measures Task 0: Standard Approach to Calculate Unmitigated Emissions



**Greenhouse Gas Mitigation
Measures Task 0: Standard
Approach to Calculate
Unmitigated Emissions**

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1 Introduction

ENVIRON International Corporation (ENVIRON) and Fehr & Peers worked with the California Air Pollution Control Officers Association (CAPCOA) to quantify reductions associated with greenhouse gas (GHG) mitigation measures that can be applied to California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) analyses. The first part of this overall task defines a standard approach to calculate the baseline emissions before mitigation. This report contains the recommendations for methodologies and approaches to assess the baseline GHG emissions.

This report and its methodologies form the basis for the subsequent tasks associated with quantification of GHG mitigation measures. To the extent possible, default values are included with this report and in the mitigation measure Fact Sheets.

This report presents methods to be used to calculate short-term and one-time emissions sources as well as emissions that will occur annually after construction (operational emissions). The one-time emission sources include changes in carbon sequestration due to vegetation changes and emissions associated with construction. The annual operational emissions include the emissions associated with building energy use including natural gas and electricity, emissions associated with mobile sources, emissions associated with water use and wastewater treatment, emissions associated with area sources such as natural gas fired hearths, landscape maintenance equipment, swimming pools, and golf courses.

2 GHG Equivalent Emissions

The term “GHGs” includes gases that contribute to the greenhouse effect, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), as well as gases that are only man-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfurhexafluoride (SF₆). These last three families of gases, while not naturally present in the atmosphere, have properties that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Accords (water is not included).¹ There are other GHGs that are not recognized by the Kyoto Accords, due either to the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Accords because there is not an obvious correlation between water concentrations and specific human activities. Water appears to act in a positive feedback manner; higher temperatures lead to higher water vapor concentrations in the atmosphere, which in turn can cause more global warming.² California has recently recognized nitrogen trifluoride as another regulated greenhouse gas.

¹ This Kyoto Protocol sets legally binding targets and timetables for cutting the greenhouse gas emissions of industrialized countries. The US has not approved the Kyoto treaty.

² From the IPCC Third Assessment Report: http://www.grida.no/climate/ipcc_tar/wg1/143.htm and http://www.grida.no/climate/ipcc_tar/wg1/268.htm

Residents and the employees and patrons of commercial and municipal buildings and services use electricity, heating, water, and are transported by motor vehicles. These activities directly or indirectly emit GHGs. The most significant GHG emissions resulting from such residential and commercial developments are emissions of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O). GHG emissions are typically measured in terms of MT of CO₂ equivalents (CO₂e), calculated as the product of the mass emitted of a given GHG and its specific global warming potential (GWP).

The effect that each of these gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a MT for MT basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent GHGs than CO₂, with GWPs of 21 and 310, respectively according to the IPCC's Second Assessment Report (SAR).³ In emissions inventories, GHG emissions are typically reported in terms of pounds (lbs) or MT⁴ of CO₂ equivalents (CO₂e). CO₂e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH₄ and N₂O have much higher GWPs than CO₂, CO₂ is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO₂e, both from developments and human activity in general. Since most regulatory agencies and protocols use the SAR GWP values as a basis, this assessment will also use SAR GWP values even though more recent values exist. However, SAR did not consider nitrogen trifluoride, however there are no sources of nitrogen trifluoride that would typically need to be quantified.

3 Units of measurement: MT of CO₂ and CO₂e

In many sections of this report, including the final summary sections, emissions are presented in units of CO₂e either because the GWPs of CH₄ and N₂O were accounted for explicitly, or the CH₄ and N₂O are assumed to contribute a negligible amount of GWP when compared to the CO₂ emissions from that particular emissions category.

Emissions and reductions are calculated in terms of metric tons. As such, "MT" will be used to refer to metric tons (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds [lbs]).

4 Indirect GHG Emissions from Electricity Use

As noted above, indirect GHG emissions are created as a result of electricity use. When electricity is used in a building, the electricity generation typically takes place offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner. The project should use information specific for each local utility provider for different parts of

³ GWP values from IPCC's Second Assessment Report (SAR, 1996) are still used by international convention and are used in this protocol, even though more recent (and slightly different) GWP values were developed in the IPCC's Fourth Assessment Report (FAR, 2007)

⁴ In this report, "MT" will be used to refer to metric MT (1,000 kilograms). "Tons" will be used to refer to short tons (2,000 pounds).

California. Accordingly, indirect GHG emissions from electricity usage are calculated using the utility specific carbon-intensity factor based Power/Utility Protocol (PUP) report from California Climate Action Registry (CCAR)⁵ for the 2006 baseline year. ENVIRON does not recommend using the 2004 PUP reports since this year was one of the first year's utilities reported emissions, as such, the data is likely less accurate than subsequent years since utilities had a chance to refine data collection methods for the later years. Furthermore, a large coal burning power plant in Mojave was going offline in 2005 which was factored into the Scoping Plan analysis. Therefore, ENVIRON suggests using the 2006 PUP reports since it likely represents a more accurate dataset year. This emission factor takes into account the baseline year's mix of energy sources used to generate electricity for a specific utility and the relative carbon intensities of these sources. The emission factor will be determined as a CO₂e incorporating the CO₂, CH₄, and N₂O emissions.

Power Utility	Carbon-Intensity (lbs CO ₂ e/MWh)
LADW&P	1,238
PG&E	456
SCE	641
SDGE	781
SMUD	555

5 Short-Term Emissions

Short-term or one-time emissions from the development of a Project are associated with vegetation removal and re-vegetation on the Project site and construction-related activities.

5.1 Construction Activities

Construction activities occur during the early stage of a project. Construction activities include any demolition, site grading, building construction, and paving. These construction activities have several main sources of GHG emissions. Off-road construction equipment such as dozers, pavers, and backhoes are used on-site during construction. These pieces of equipment typically are diesel fueled although other fuels are occasionally used. Besides the off-road construction, there are on-road vehicles. These vehicles are used for worker commuting, delivering of material to the site, and hauling material away from the site. The methodology to calculate these sources of emissions is described in the next sections.

5.1.1 Estimating GHG Emissions from Off-Road Construction Equipment

This section describes how emissions from off-road equipment used during demolition, site grading, building construction and paving are calculated. This section can be used for any fuel

⁵ California Climate Action Registry (CCAR) Database. PUP Report.

burning equipment such as diesel, gasoline, or compressed natural gas (CNG). For electric equipment please see the method in the next section.

First, the number and type of equipment that will be used in the construction, as well as the duration of the entire construction project, is needed. Absent other data, ENVIRON recommends that each piece of equipment will operate for 8 hours a day, five days a week throughout the construction duration. An equipment hour is defined as one hour of a piece of equipment being used. Specifications for each type of construction equipment (horsepower, load factor, and GHG emission factor) are provided by OFFROAD2007⁶. CO₂ and CH₄ emissions for each type of construction equipment are calculated as follows:

$$\text{Equipment Emissions [grams]} = \frac{\text{Total equipment hours}}{\text{hours}} \times \frac{\text{emission factor [grams per brake horsepower-hour]}}{\text{horsepower}} \times \text{equipment horsepower} \times \text{load factor}^7$$

The grams of CO₂ and CH₄ are multiplied by their respective GWP and then the two emissions are summed to derive the final CO₂e emissions from the piece of off-road equipment. Since OFFROAD2007 does not provide an emission factor for N₂O which is a minor subset of nitrogen oxides (NO_x) emissions and the contribution to the overall GHG emissions is likely small, it is therefore not included in calculations that used OFFROAD2007. These were accounted for with alternative fuels since they have a larger proportion of N₂O and CH₄.

5.1.2 Estimating GHG emissions from Electric Off-Road Construction Equipment

In order to estimate the indirect GHG emissions associated with electricity consumption of electrical powered equipment, the following inputs are required. First, the total operating hours of the electrical piece of equipment is needed. Secondly, the amount of kilowatts the equipment uses per time is needed. These two pieces are used along with the carbon intensity factor for the local utility provider as follows:

$$\text{Equipment Emissions} = \frac{\text{Total equipment hours}}{\text{equipment hours}} \times \frac{\text{average power draw (kW/hr)}}{\text{draw (kW/hr)}} \times \text{Utility EF (g CO}_2\text{e per kWhr)}$$

5.1.3 GHG Emissions from On-Road Vehicles Associated with Construction

Emissions from on-road vehicles associated with construction include workers commuting to the site, vendors delivering materials, and hauling away of materials. GHGs are emitted from these vehicles in two ways: running emissions, produced by driving the vehicle, and startup emissions, produced by turning the vehicle on. Idling emissions will not be considered since

⁶ OFFROAD2007 is a model developed by the Air Resources Board which contains emission factors for off-road equipment. It is available at : <http://www.arb.ca.gov/msei/offroad/offroad.htm>

⁷ Load factor is the percentage of the maximum horsepower rating at which the equipment normally operates.

regulations exist which limit idling⁸ and they would represent a small contribution to the GHG emissions. The majority of these on-road vehicle emissions are running emissions.

Running emissions are calculated using the same method for all trip types. The total Vehicle Miles Traveled (VMT) for the trip type category is estimated, and then multiplied by the representative GHG emission factors for the vehicles expected to be driven. The total VMT for a given trip type is calculated as follows:

$$VMT = \text{Number of round trips} \times \text{average round trip length (miles)}$$

The number of trips should be based on project specific information. Default values associated with each land use type can be obtained construction cost estimators or default values in emission estimator programs. Average round trip length should be based on project specific information or county specific default values. After total VMT is calculated, GHG emissions for on-road vehicles associated with construction can be calculated from the following equation:

$$CO_2 \text{ emissions} = VMT \times EF_{\text{running}}$$

Where:

VMT = vehicle miles traveled

EF_{running} = running emission factor for vehicle fleet for trip type

The CO₂ calculation involves the following assumptions:

- a. Vehicle Fleet Defaults:
 - a. Workers commute half with light duty trucks (LDTs) and half commute in light duty autos (LDAs). Half of the LDTs are type 1 and the other half type 2.
 - b. Vendors are all heavy-heavy duty vehicles.
 - c. Hauling is all heavy-heavy duty vehicles.
- b. The emission factor depends upon the speed of the vehicle. A default value of 35 miles per hour will be used.
- c. EMFAC emission factors from the construction year will be used for EF_{running}.

⁸ The Air Resources Board adopted in 2004 and modified in 2005 an Air Toxic Control Measure that limits idling in diesel vehicles to 5-minutes. <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>

The emissions associated with CH₄ and N₂O are calculated in a similar manner or assumed to represent 5% of the total CO₂e emissions. They are then converted to CO₂e by multiplying by their respective global warming potential.

Startup emissions are CO₂ emitted from starting a vehicle. For the various trips during all phases, the startup emissions are calculated using the following assumptions:

- a. The same vehicle fleet assumptions as used in running emissions.
- b. Two engine startups per day with a 12 hour wait before each startup.⁹

The USEPA recommends assuming that CH₄, N₂O, and HFCs account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.¹⁰ To incorporate these additional GHGs into the calculations, the total GHG footprint is calculated by dividing the CO₂ emissions by 0.95.

5.2 Vegetation Change

ENVIRON suggests following the IPCC protocol for vegetation since it has default values that work well with the information typically available for development projects. This method is similar to the CCAR Forest Protocol¹¹ and the Center for Urban Forest Research Tree Carbon Calculator¹², but it has more general default values available that will generally be applicable to all areas of California without requiring detailed site-specific information¹³.

5.2.1 Quantifying the One-Time Release by Changes in Carbon Sequestration Capacity

The one-time release of GHGs due to permanent changes in carbon sequestration capacity is calculated using the following four steps:¹⁴

1. *Identify and quantify the change in area of various land types due to the development (i.e. alluvial scrub, non-native grassland, agricultural, etc.).* These area changes include not only the area of land that will be converted to buildings, but also areas disrupted by the construction of utility corridors, water tank sites, and associated borrow and grading areas.

⁹ The emission factor grows with the length of time the engine is off before each ignition.

¹⁰ USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle*. Office of Transportation and Air Quality. February.

¹¹ CCAR. 2007. Forest Sector Protocol Version 2.1. September. Available at: http://www.climateregistry.org/resources/docs/protocols/industry/forest/forest_sector_protocol_version_2.1_sept2007.pdf

¹² Available at: <http://www.fs.fed.us/ccrc/topics/urban-forests/ctcc/>

¹³ The CCAR Forest Protocol and Urban Forest Research Tree Carbon Calculator are not used since their main focus is annual emissions for carbon offset considerations. As such they are designed to work with very specific details of the vegetation that is not available at a CEQA level of analysis.

¹⁴ This section follows the IPCC guidelines, but has been adapted for ease of use for these types of Projects.

Areas temporarily disturbed that will eventually recover to become vegetated will not be counted as vegetation removed as there is no net change in vegetation or land use.¹⁵

2. *Estimate the biomass associated with each land type.* For the purposes of this report, ENVIRON suggests using the available general vegetation types found in the IPCC publication Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines).¹⁶

California vegetation is heavily dominated by scrub and chaparral vegetation which may not be accurately characterized by default forest land properties. Consequently, ecological zones and biomass based subdivisions identified in the IPCC Guidelines were used to sub-categorize the vegetation as scrub dominated. These subcategories should be used to determine the CO₂ emissions resulting from land use impacts.

3. *Calculate CO₂ emissions from the net change of vegetation.* When vegetation is removed, it may undergo biodegradation,¹⁷ or it may be combusted. Either pathway results in the carbon (C) present in the plants being combined with oxygen (O₂) to form CO₂. To estimate the mass of carbon present in the biomass, biomass weight is multiplied by the mass carbon fraction, 0.5.¹⁸ The mass of carbon is multiplied by 3.67¹⁹ to calculate the final mass of CO₂, assuming all of this carbon is converted into CO₂.
4. Calculate the overall change in sequestered CO₂. – For all types of land that change from one type of land to another,²⁰ initial and final values of sequestered CO₂ are calculated using the equation below.

Overall Change in Sequestered CO₂ [MT CO₂]

$$= \sum_i (SeqCO_2)_i \times (area)_i - \sum_j (SeqCO_2)_j \times (area)_j$$

Where:

SeqCO ₂	=	mass of sequestered CO ₂ per unit area [MT CO ₂ /acre]
area	=	area of land for specific land use type [acre]
i	=	index for final land use type
j	=	index for initial land use type

¹⁵ This assumption facilitates the calculation as a yearly growth rate and CO₂ removal rate does not have to be calculated. As long as the disturbed land will indeed return to its original state, this assumption is valid for time periods over 20 years.

¹⁶ Available online at <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm>

¹⁷ Cleared vegetation may also be deposited in a landfill or compost area, where some anaerobic degradation which will generate CH₄ may take place. However, for the purposes of this section, we are assuming that only aerobic biodegradation will take place which will result in CO₂ emissions only.

¹⁸ The fraction of the biomass weight that is carbon. Here, a carbon fraction of 0.5 is used for all vegetation types from CCAR Forest Sector Protocol.

¹⁹ The ratio of the molecular mass of CO₂ to the molecular mass of carbon is 44/12 or 3.67.

²⁰ For example from forestland to grassland, or from cropland to permanently developed.

5.2.2 Calculating CO₂ Sequestration by Trees

Planting individual trees will sequester CO₂. Changing vegetation as described above results in a one-time carbon-stock change. Planting trees is also considered to result in a one-time carbon-stock change. Default annual CO₂ sequestration rates on a per tree basis, based on values provided by the IPCC are used²¹. An average of 0.035 MT CO₂ per year per tree can be used for trees planted, if the tree type is not known.

Urban trees are only net carbon sinks when they are actively growing. The IPCC assumes an active growing period of 20 years. Thereafter, the accumulation of carbon in biomass slows with age, and will be completely offset by losses from clipping, pruning, and occasional death. Actual active growing periods are subject to, among other things, species, climate regime, and planting density. In this report, the IPCC default value of 20 years is recommended. For large tree sequestration projects, the Project may consider using the Forest or Urban tree planting protocols developed by Climate Action Registry (CAR). These protocols have slightly different assumptions regarding steady state, tree growth, and replacement of trees.

5.3 Built Environment

The amount of energy used, and the associated GHG emissions emitted per square foot of available space vary with the type of building. For example, food stores are far more energy intensive than warehouses, which have little climate-conditioned space. Therefore, this analysis is specific to the type of building.

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. Combustion of any type of fuel emits CO₂ and other GHGs directly into the atmosphere; when this occurs within a building (such as by natural gas consumption) this is a direct emission source²² associated with that building. GHGs are also emitted during the generation of electricity from fossil fuels. When electricity is used in a building, the electricity generation typically takes place offsite at the power plant; electricity use in a building generally causes emissions in an indirect manner.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 part 6 governs energy consumed by the built environment, mechanical systems, and some fixed lighting. This includes the space heating, space cooling, water heating, and ventilation systems. Non-building energy use, or “plug-in” energy use can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). The following two steps are performed to quantify the energy use due to buildings:

²¹ The Center for Urban Forest Research Tree Carbon Calculator is not suggested since it requires knowledge on specific tree species to estimate carbon sequestered. This information is typically not available during the preparation of CEQA documents.

²² California Climate Action Registry (CCAR) General Reporting Protocol (GRP), Version 3.1 (January). Available at: http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf, Chapter 8

1. Calculate energy use from systems covered by Title 24²³ (HVAC system, water heating system, and the lighting system).
2. Calculate energy use from office equipment, plug-in lighting, and other sources not covered by Title 24.

The resulting energy use quantities are then converted to GHG emissions by multiplying by the appropriate emission factors obtained by incorporating information on local electricity providers for electricity, and by natural gas emission factors for natural gas combustion.

ENVIRON recommends using default values for Title 24 and non-Title 24 energy use for various building types. These will take into account the building size and climate zone. There are several sources of information that can be used to obtain building energy intensity. Each is described briefly below.

The *California Commercial Energy Use Survey* (CEUS) data is provided by the California Energy Commission (CEC). It is based on a survey conducted in 2002 for existing commercial buildings in various climate zones. Electricity and natural gas use per square foot for each end use in each building type and climate zone is extracted from the CEUS data. Since the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 regulated energy intensity for each building type.

Commercial Buildings Energy Consumption Survey (CBECS) is a survey of non-residential buildings that was conducted in 2003 by the Energy Information Administration (EIA). Electricity and natural gas use per square foot can be extracted from this data. The energy use estimates are assumed to represent 2001 Title 24 compliant buildings. Using CBECS, the percent of electricity and natural gas used for each end use can be calculated. It is then straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type. Similar surveys exist for manufacturing and residential energy use.

The *Residential Appliance Saturation Survey* (RASS) refers to the California Energy Commission Consultant Report entitled "California Statewide Residential Appliance Saturday Study". Data from RASS is used to calculate the total electricity and natural gas use for residential buildings on a per dwelling unit. The RASS study estimates the unit energy consumption (UEC) values for individual households surveyed and also provides the saturation number for each type of end use. The saturation number indicates the proportion of households that have a demand for each type of end-use category. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

Alternative Calculation Method (ACM) software is available that makes estimates of the energy consumption by a model Title 24 compliant building. These programs provide

²³ Title 24, Part 6, of the California Code of Regulations: California's Energy Efficiency Standards for Residential and Nonresidential Buildings. <http://www.energy.ca.gov/title24/>

annual energy use for the heating, ventilation, and air conditioning (HVAC) system in each building; therefore, estimates from ACM software represent Title 24-regulated energy use. These do not calculate the non-Title 24 energy use for the buildings.

The Department of Energy produced the *Building America Research Benchmark Definition* (BARBD) technical manual, which presents empirical equations for electricity and natural gas usage. As the data is provided by end use, it is straightforward to calculate the Title 24 and non-Title 24 electricity and natural gas intensity for each building type.

Literature surveys may also be used for building and land use types not well represented by the above sources.

ENVIRON suggests using the CEUS and RASS datasets for these calculations since the data is available for several land use categories in different climate zones in California.

The Title 24 standards have been updated twice (in 2005 and 2008) since some of these data were compiled. CEC has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end use can be used to account for reductions in electricity use due to updates to Title 24. Since energy use for each different system type (ie, heating, cooling, water heating, and ventilation) as well as appliances is defined, this method will easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Based on the electricity intensity, CO₂e intensity values (CO₂e emissions per square foot or dwelling unit, as applicable, per year) for each building type can be calculated. Electricity intensity data is multiplied by an electricity emission factor to generate CO₂e intensity values. The total CO₂e emissions from each building type are calculated by multiplying the CO₂e intensity values by the appropriate metric (building square footage for non-residential buildings or number of dwelling units for residential buildings). Summing the CO₂e emissions from all building types gives the total CO₂e emissions from electricity use in Title 24 and non-Title 24 sources in buildings.

Based on the natural gas intensity, CO₂e intensity values (CO₂e emissions per square foot or dwelling unit, as applicable, per year) for each building type can be calculated. Natural gas intensity data is multiplied by a natural gas emission factor to generate CO₂e intensity values. The total CO₂e emissions from each building type are calculated by multiplying the CO₂e intensity values by the appropriate metric (building square footage for non-residential buildings or number of dwelling units for residential buildings). Summing the CO₂e emissions from all building types gives the total CO₂e emissions from natural gas use in Title 24 and non-Title 24 sources in buildings.

5.3.1 Natural Gas Boilers

GHG emissions from the combustion of natural gas are calculated as the product of natural gas consumption, natural gas heat content, and carbon-intensity factor. The Project Applicant has

to determine the natural gas consumption, while the heat content and carbon-intensity factor can be obtained from the CCAR General Reporting Protocol.

5.4 Area Sources

Area sources are local combustion of fuel. The area sources covered in this section include natural gas fireplaces/stoves and landscape maintenance equipment. Natural gas usage from the primary building heating is not included in this category since it is already included with building energy use. Each of these area sources is discussed further.

5.4.1 Natural Gas Fireplaces/Stoves

GHG emissions associated with natural gas fired fireplaces are calculated using emission factors from CCAR. The average BTU per hour for fireplaces in homes needs to be specified. Default values for annual fireplace usage varies for each County. Natural gas is assumed to have 1,020 BTU per standard cubic foot²⁴.

5.4.2 Landscape Maintenance

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, roto tillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps.

Similar to construction off-road equipment, emission factors are based on the OFFROAD2007 model. These are combined with the hours of operation for each equipment piece as well as the horsepower and load factors. The GHG emissions will be calculated based on the emission factors for the equipment and fuel reported from OFFROAD2007 and the appropriate GWP. Default usages (hours of operation) should be determined for the landscape equipment based on the Project needs.

5.5 Water

Delivering and treating water for use at the project site requires energy. This embodied energy associated with the distribution of water to the end user is associated with the electricity to pump and treat the water. GHG emissions due to water use are related to the energy used to convey, treat and distribute water. Thus, these emissions are indirect emissions from the production of electricity to power these systems.

The amount of electricity required to treat and supply water depends on the volume of water involved. Three processes are necessary to supply water to users: (1) supply and conveyance of the water from the source; (2) treatment of the water to potable standards; and (3) distribution of the water to individual users.

²⁴ USEPA. 1998. AP-42 Emission Factors. Chapter 1.4 Natural Gas Combustion.

Therefore, to quantify the GHG emissions associated with the distribution of water to an end user, the carbon intensity of electricity is used along with the amount of electricity used in pumping and treating the water. Since consumption of water varies greatly for each land use type, default values need to be determined with several listed in the mitigation measure fact sheets. Since buildings may have different percentages of water associated with indoor and outdoor water usage, the water usage is quantified separately. In addition since mitigation measures associated with water use may be directed separately toward indoor and outdoor water usage, this will be beneficial for this task.

5.5.1 Indoor

Indirect emissions resulting from electricity use are determined by multiplying electricity use by the CO₂e emission factor provided by the local electricity supplier. Energy use per unit of water for different aspects of water treatment (e.g. source water pumping and conveyance, water treatment, distribution to users) is determined using the stated volumes of water and energy intensities values (i.e., energy use per unit volume of water) provided by reports from the California Energy Commission (CEC) on energy use for California's water systems.²⁵ The CEC report estimates the electricity required to extract and convey one million gallons of water. Using this energy intensity factor, the expected indoor water demand, and the utility-specific carbon-intensity factor, GHG emissions from indoor water supply and conveyance may be calculated.

The amount of electricity required to treat and distribute one million gallon of potable water is estimated in the CEC report. Based on the estimated indoor water demand, these energy intensity factors, and the utility-specific carbon intensity factor, GHG emissions from indoor water treatment and distribution may be calculated.

The sum of emissions due to supplying, conveying, treating, and distributing indoor water gives the total emissions due to indoor water use.

5.5.2 Outdoor

Indirect emissions resulting from electricity use are determined by multiplying electricity use by the CO₂ emission factor provided by the local electricity supplier. Energy use per unit of water for different aspects of water treatment (e.g. source water pumping and conveyance, water treatment, distribution to users) is determined using the stated volumes of water and energy intensities values (i.e., energy use per unit volume of water) provided by reports from the California Energy Commission (CEC) on energy use for California's water systems.²⁶ The

²⁵ CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF, CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

²⁶ CEC 2005. California's Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF, CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

energy needed to supply and convey the water will be used to pump this water from the sources and distribute it throughout the development. The CEC report estimates the electricity required to extract and convey one million gallons of water. Using this energy intensity factor, the expected outdoor water demand, and the utility-specific carbon-intensity factor, GHG emissions from outdoor water supply and conveyance may be calculated.

The amount of electricity required to treat and distribute one million gallon of potable water (see recycled water for non-potable water) is estimated in the CEC report. Based on the estimated outdoor water demand, these energy intensity factors, and the utility-specific carbon intensity factor, GHG emissions from outdoor water treatment and distribution may be calculated.

The sum of emissions due to supplying, conveying, treating, and distributing outdoor water gives the total emissions due to outdoor water use.

5.5.2.1 Landscape Watering – Turf Grass

The amount of outdoor water used in the landscape watering of turf grass is calculated based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance²⁷ and the CDWR 2000 report “A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III.”²⁸ Using this methodology, the amount of water required to support the baseline turf water demand ($Water_{baseline}$) is calculated as follows:

$$ETC = Kc \times ET_0$$

Where:

- ETC = Crop Evapotranspiration, the total amount of water the baseline turf loses during a specific time period due to evapotranspiration²⁹ (inches water/day)
- KC = Crop Coefficient, factor determined from field research, which compares the amount of water lost by the crop (e.g. turf) to the amount of water lost by a reference crop (unitless).
Species-specific; provided in CDWR 2000
- ET₀ = Reference Evapotranspiration, the amount of water lost by a reference crop (inches water/day)
Region-specific; provided in Appendix A of CDWR 2009

²⁷ California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: <http://www.water.ca.gov/wateruseefficiency/docs/MWEL009-10-09.pdf>

²⁸ California Department of Water Resources. 2000. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California: The Landscape Coefficient Method and WUCOLS III. Available online at: http://www.water.ca.gov/pubs/conservation/a_guide_to_estimating_irrigation_water_needs_of_landscape_plantings_in_california_wucols/wucols00.pdf

²⁹ Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: <http://www.cimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19>

Then:

$$\text{Water}_{\text{baseline}} = \text{ETC} \times \text{Areabaseline} \times 0.62 \times 365$$

Where:

- $\text{Water}_{\text{baseline}}$ = Volume of water required to support the baseline turf (gallons/year)
 $\text{Area}_{\text{baseline}}$ = Area of existing or standard turf (square feet)
0.62 = conversion factor (gallons/squarefoot.inches water)
365 = conversion factor (days/year)

Based on the estimated outdoor water demand for watering turf grass, the outdoor water energy intensity factors described above, and the utility-specific carbon intensity factor, GHG emissions from watering turf grass in lawns may be calculated.

5.5.2.2 Landscape Watering – General

The amount of outdoor water used in the landscape watering of landscapes and lawns is calculated based on the California Department of Water Resources (CDWR) 2009 Model Water Efficient Landscape Ordinance.³⁰ Using this methodology, the amount of water required to support the baseline lawn water demand ($\text{Water}_{\text{baseline}}$) is defined as the Maximum Applied Water Allowance (MAWA) and is calculated as follows:

$$\text{Water}_{\text{baseline}} = \text{MAWA} = \text{ET}_0 \times 0.62 \times [(0.7 \times \text{LA}) + (0.3 \times \text{SLA})]$$

Where:

- $\text{Water}_{\text{baseline}}$ = Volume of water required to support the baseline lawn (gallons/year)
MAWA = Maximum Applied Water Allowance (gallons/year)
 ET_0 = Annual Reference Evapotranspiration³¹ from Appendix A of CDWR 2009 (inches per year)
0.7 = ET Adjustment Factor (ETAF)
LA = Landscape Area³² includes Special Landscape Area³³ (square feet)

³⁰ California Department of Water Resources. 2009. Model Water Efficient Landscape Ordinance. Available online at: <http://www.water.ca.gov/wateruseefficiency/docs/MWEL009-10-09.pdf>

³¹ Evapotranspiration is water lost to the atmosphere due to evaporation from soil and transpiration from plant leaves. For a more detailed definition, see this California Irrigation Management Information System (CIMIS) website: <http://www.cimis.water.ca.gov/cimis/infoEtoOverview.jsp;jsessionid=91682943559928B8A9A243D2A2665E19>

³² § 491 Definitions in CDWR 2009: "Landscape Area (LA) means all the planting areas, turf areas, and water features in a landscape design plan subject to the Maximum Applied Water Allowance calculation. The landscape area does not include footprints of buildings or structures, sidewalks, driveways, parking lots, decks, patios, gravel or stone walks, other pervious or non-pervious hardscapes, and other non-irrigated areas designed for non-development (e.g., open spaces and existing native vegetation)."

³³ § 491 Definitions in CDWR 2009: "Special Landscape Area (SLA) means an area of the landscape dedicated

0.62 = Conversion factor (to gallons per square foot)
 SLA = Portion of the landscape area identified as Special Landscape Area (square feet)
 0.3 = the additional ETAF for Special Landscape Area

Based on the estimated outdoor water demand for watering lawns, the outdoor water energy intensity factors described above, and the utility-specific carbon intensity factor, GHG emissions from watering lawns may be calculated.

5.5.3 Recycled Water

After use, wastewater is treated and reused as reclaimed water. Any reclaimed water produced is generally redistributed to users via pumping. An estimate of the non-potable water demand to be met through the distribution of recycled water is needed. Estimates of the amount of energy needed to redistribute and, if necessary, treat reclaimed water is 400 kW-hr per acre foot.³⁴ Based on the estimated demand for reclaimed water, the estimated electricity demand and the utility-specific carbon-intensity factor, non-potable reclaimed water redistribution emissions are calculated.

5.5.4 Process

Industrial land uses can use a large amount of water for their processes. The water used for this will not be quantified since there is not sufficient water use data for this type of land use for the development of a default value. Water use is highly dependent on the specific industry..

5.6 Wastewater

Emissions associated with wastewater treatment include indirect emissions necessary to power the treatment process and direct emissions from degradation of organic material in the wastewater.

5.6.1 Direct Emissions

Direct emissions from wastewater treatment include emissions of CH₄ and biogenic CO₂. The method described by the Local Government Operations Protocol developed by the California Air Resources Board is suggested with default values assigned since detailed plant specific data will typically not be available.³⁵ The assumed daily 5-day carbonaceous biological oxygen

solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.”

³⁴ CEC 2005. California’s Water-Energy Relationship. Final Staff Report. CEC-700-2005-011-SF.

³⁵ California Air Resources Board. 2008. *Local Government Operations Protocol - for the quantification and reporting of greenhouse gas emissions inventories*. Version 1.0. September 2008. Developed in partnership by California Air Resources Board, California Climate Action Registry, ICLEI - Local Governments for Sustainability, The Climate Registry

demand (BOD₅) of 200 mg/L-wastewater is multiplied by the protocol defaults for maximum CH₄-producing capacity (0.6 kg-CH₄/kg-BOD₅) and other default values to obtain the direct CH₄ emission. The amount of digester gas produced per volume of wastewater, and amount of N₂O per volume of wastewater needs to be determined. These values are then multiplied by the Global Warming Potential factor³⁶ of 21 for CH₄ or 310 for the GWP of N₂O that would be generated otherwise to obtain the annual CO₂ equivalent emissions.

5.6.2 Indirect Emissions

Indirect GHG emissions result from the electricity necessary to power the wastewater treatment process. The electricity required to operate a wastewater treatment plant is estimated to be 1,911 kW-hr per million gallons.³⁷ Based on the expected amount of wastewater requiring treatment, which will be assumed to be equal to the indoor potable water demand absent other data, the energy intensity factor and the utility-specific carbon-intensity factor, indirect emissions due to wastewater treatment are calculated.

5.7 Public Lighting

Lighting sources contribute to GHG emissions indirectly, via the production of the electricity that powers these lights. Lighting sources considered in this source category include streetlights, traffic lights, and parking lot lights. The annual electricity use may be estimated using the number of heads, the power requirements of each head, and the assumption that they operate for 12 hours a day on average for 365 days per year or 24 hours for traffic lights. The emission factor for public lighting is the utility-specific carbon-intensity factor. Multiplying the electricity usage by the emission factor gives an estimate of annual CO₂e emissions from public lighting.

5.8 Municipal Vehicles

GHG emissions from municipal vehicles are due to direct emissions from the burning of fossil fuels. Municipal vehicles considered in this source category include vehicles such as police cars, fire trucks, and garbage trucks. Data from reports by Medford, MA; Duluth, MN; Northampton, MA; and Santa Rosa, California³⁸ show that the CO₂ emissions from municipal

³⁶ Intergovernmental Panel on Climate Change. IPCC Second Assessment - Climate Change 1995.

³⁷ CEC 2006. Refining Estimates of Water-Related Energy Use in California. PIER Final Project Report. Prepared by Navigant Consulting, Inc. CEC-500-2006-118. December.

³⁸ City of Medford. 2001. Climate Action Plan. October. <http://www.massclimateaction.org/pdf/MedfordPlan2001.pdf>

City of Northampton. 2006. Greenhouse Gas Emissions Inventory. Cities for Climate Protection Campaign. June. <http://www.northamptonma.gov/uploads/listWidget/3208/NorthamptonInventoryClimateProtection.pdf>

City of Santa Rosa. Cities for Climate Protection: Santa Rosa. http://ci.santa-rosa.ca.us/City_Hall/City_Manager/CCPFinalReport.pdf

Skoog., C. 2001. Greenhouse Gas Inventory and Forecast Report. City of Duluth Facilities Management and The International Council for Local Environmental Initiatives.

October. <http://www.ci.duluth.mn.us/city/information/ccp/GHGEmissions.pdf>

vehicles would be approximately³⁹ 0.05 MT per capita per year. Using these studies and the expected population, emissions from municipal vehicles may be calculated.

5.9 On-Road Mobile Sources

This section estimates GHG emissions from on-road mobile sources. The on-road mobile source emissions considered a project will be from the typical daily operation of motor vehicles by project residents and non-residents. The GHG emissions based upon all vehicle miles traveled associated with residential and non-residential trips regardless of internal or external destinations or purpose of trip are estimated. Traffic patterns, trip rates, and trip lengths are based upon the methods discussed below.

The CCAR GRP⁴⁰ recommends estimating GHG emissions from mobile sources at an individual vehicle level, assuming knowledge of the fuel consumption rate for each vehicle as well as the miles traveled per car. Since these parameters are not known for a future development, the CCAR guidance can not be used as recommended.

Estimating Trip Rates

The majority of transportation impact analysis conducted for CEQA documents in California apply trip generation rates provided by the Institute of Transportation Engineers (ITE) in their regularly updated report *Trip Generation*. The report is based on traffic counts data collected over four decades at built developments throughout the United States. This data is typically based on single-use developments, in suburban locations with ample free parking and with minimal transit service and demand management strategies in place. As a result, the ITE trip generation rates represent upper bound trip generation rates for an individual land use type. This represents a good basis against which to measure the trip-reducing effects of any one or more of the mitigation strategies that will be quantified in subsequent tasks. Therefore, we recommend ITE trip rates as the baseline condition against which the effectiveness of CAPCOA's mitigation measures is applied.

There are some CEQA traffic studies that use data other than ITE trip generation rates. Below we briefly discuss the possible use of these alternative datasets. These traffic studies typically use trip generation data from one of the following sources:

SANDAG Traffic Generators. In the San Diego region, most studies use data from the SANDAG *Traffic Generators* report. This report is similar to the ITE *Trip Generation* in that it uses primarily suburban, single use developments, except that this dataset is based on traffic counts conducted in the San Diego region rather than throughout the United States. In studies where the SANDAG data is used, CAPCOA reviewers should apply the trip reduction estimates presented in subsequent tasks directly to the SANDAG trip generation rates.

³⁹ In an effort to be conservative, the largest per capita number from these four reports was used.

⁴⁰ California Climate Action Registry (CCAR). 2009. *General Reporting Protocol*. Version 3.1. January.

Travel Forecast Models. For some large development projects or general plans, the local or regional travel model is used to estimate the number of trips generated as well as trip lengths and vehicle speeds at which the individual trips occur. These models account for whether the trip segment occurs on a freeway or local streets as well as the degree of congestion. The values for trip generation rates and trip lengths using ITE and average trip lengths can be used to assess the model estimates of vehicle trip generation and VMT. These comparisons should recognize that the travel models explicitly account for various factors that reduce trip-making and VMT, including the demographic characteristics of the site occupants, location and accessibility of the development site relative to other destinations in the region, the mix of land uses within the site and its surrounding area, and possibly the availability of effective transit service. When performing a comparison using the ITE trip rates and average trip lengths, the reviewer should take into consideration that these factors have already been accounted for in the modeling. Therefore, we recommend applying ITE trip rates and lengths along with the adjustments recommended elsewhere in this document (accounting for site location, design and demographics) as a means of reality-checking transportation model results.

Traffic counts at comparable developments. Some traffic assessments elect to conduct traffic counts at existing developments that are similar to the proposed development. When reviewing impact assessments produced using such information, the reviewer should take into account the extent to which the surveyed development(s) already contain trip generation and trip length reducing measures. Care needs to be used to avoid double-counting reductions.

Estimating VMT from Mobile Sources

Data on average trip lengths are used to translate trip generation rates into vehicle miles of travel (VMT). These trip lengths should be obtained from published sources of average trip lengths for different types of trip types (i.e., commute trips, shopping trips, and others) for each region within the state. Vehicle miles traveled (VMT) are calculated by multiplying ITE trip rates by the typical trip lengths.

Some mechanisms that reduce trip generation rates and trip lengths below these standard ITE-trip rates and current average trip lengths might be considered to be intrinsic parts of the development proposal rather than mitigation measures, such as project location (e.g., infill or transit oriented development [TOD]), density, mix of uses, and urban design. These are not considered part of the baseline condition, but are recognized and quantified as project design features (PDFs). This approach has the following advantages: 1) it creates a consistent basis of analysis for all development projects regardless of location and self-mitigating features already included in the project proposal, and 2) it highlights all elements of a project that reduce trip generation rates and vehicle miles traveled.

Other Factors Influencing Mobile Source GHG Emissions

Beyond trip generation, trip length and VMT, other factors that affect GHG emissions include traffic flow, vehicle fuel consumption rates, and fuel type.

Traffic speed and efficiency profiles are largely influenced by: a) the project location and degree of prevailing congestion in its vicinity, b) the degree to which the project implements traffic level-

of-service mitigation measures often triggered by CEQA review, and c) actions taken by local, regional governments and Caltrans to reduce corridor or area-wide congestion.

The simplified mitigation assessment methods developed for this study use several categories of emissions factors per VMT that account for a) the generalized project location (core infill, inner ring suburbs, outer suburbs, rural), and b) and region-specific fleet and emissions rate if available.

While it is beyond the scope of this document to provide CAPCOA the ability to perform traffic speed and efficiency analysis, the study report advises CAPCOA on the type of analysis to expect to see in CEQA documents on development projects. CEQA impact and mitigation assessment methods should continue to perform air quality analysis using tools such as EMFAC that reference prevailing traffic speed profiles, especially for infill development and congested corridors, while applying appropriate credit for congestion reducing measures included in the project mitigation requirements, funded capital improvements plans, and fiscally constrained Regional Transportation Plans (RTPs.)

5.9.1 Estimating GHG Emissions from Mobile Sources

The CO₂ emissions from mobile sources were calculated with the trip rates, trip lengths and emission factors for running and starting emissions from EMFAC2007 as follows:

$$CO_2 \text{ emissions} = VMT \times EF_{\text{running}}$$

Where:

VMT = vehicle miles traveled
EF_{running} = emission factor for running emissions

The CO₂e calculation involves the following assumptions:

- The emission factor depends upon the speed of the vehicle.
- EMFAC emission factors from the baseline year will be used for EF_{running} based on County specific fleet mix for different trip types and adjusted to account for applicable regulations that are not currently incorporated yet into EMFAC.

Startup emissions are CO₂ emitted from starting a vehicle. Startup emissions are calculated using the following assumptions:

- The number of starts is equal to the number of trips made annually.
- The breakdown in vehicles is EMFAC fleet mix for County specific fleet mix.
- The emission factor for startup is calculated based on a weighted average of time between starts for each trip type (commute trips versus all other types).

Fleet distribution types will be based on EMFAC2007 or the most recent EMFAC version available. For mobile sources, the USEPA recommends assuming that CH₄, N₂O, and HFCs

account for 5% of GHG emissions from on-road vehicles, taking into account their GWPs.⁴¹ To incorporate these additional GHGs into the calculations, the total GHG footprint is calculated by dividing the CO₂ emissions by 0.95.

Emission factors for alternative fuel can be obtained from the CCAR General Reporting Protocol. For comparison with alternative fuel, N₂O and CH₄ emissions should be calculated separately as their emissions from alternative fuel are generally higher than from gasoline or diesel.

Low-emission-vehicle programs, such as neighborhood electric vehicles (NEV) or car sharing programs, will only be considered in accounting for GHG reductions if included in project-specific design or mitigation measures.

5.10 GHG Emissions from Specialized Land Uses

Below are methods to quantify GHG emissions from some additional land use categories that may be commonly found in development projects. These include golf courses and swimming pools. The methods proposed to determine GHG emissions associated with these sources is discussed in the following sections. The GHG emissions will typically fall into other categories such as landscape maintenance, water usage, and buildings, but since the data sources are different, they are explicitly described.

5.10.1 Golf Courses

Emission flux resulting from the construction of the golf course is not discussed, nor is the sequestration of CO₂ into the turf, trees, or lakes of the golf course. Operational CO₂ emissions were calculated for three areas: irrigation, maintenance (mowing), and on-site buildings' energy use. All three components are discussed in this section.

5.10.2 Calculating CO₂ Emissions from Irrigation of the Golf Course

The release of GHGs due to irrigation practices was calculated in two steps:

1. Identify the quantity of water needed.
2. Calculate the emissions associated with pumping the water.

1. *Identify the quantity of water needed.* Standard water use for an 18-hole golf course ranges from 250 to 450 acre-ft yearly. A survey of golf course superintendents conducted in the summer of 2003 by the Northern and Southern California Golf Associations revealed an annual average California usage of 345 acre-ft.⁴² Numerous factors will affect the actual water usage

⁴¹ USEPA. 2005. *Emission Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle*. Office of Transportation and Air Quality. February.

⁴² Northern California Golf Association. *Improving California Golf Course Water Efficiency*, pg 14. <http://www.owue.water.ca.gov/docs/2004Apps/2004-079.pdf>

of a specific golf course, and it is likely to vary by year. ENVIRON recommends using the average usage of 345 acre-ft per year annually.

2. *Calculate the associated emissions.* Using the information identified above, ENVIRON calculates total emissions from irrigation of an 18-hole golf course as follows:

Estimate total dynamic head: This is the combination of lift (300 feet) and desired pressure. Standard athletic field sprinklers require a base pressure of approximately 65 psi.⁴³

$$\begin{array}{rcl} 60 \text{ psi} \times 2.31 \text{ ft/psi}^{44} & = & 139 \text{ ft} \\ + \text{ lift} & & = \underline{300 \text{ ft}} \\ \text{Total dynamic head} & = & 439 \text{ ft} \end{array}$$

Identify fuel unit and multiply by head: Possible pumping fuels include electricity, natural gas, diesel, and propane. In these calculations, ENVIRON assumes that all pumps will use electricity. Based on the literature, ENVIRON recommends using a pumping energy use of 1.551 kW-hr/acre-ft/ft.⁴⁵

$$1.551 \text{ kW-hr/acre-ft/ft} \times 439 \text{ ft} = 681 \text{ kW-hr/acre-foot}$$

Multiply energy demand by emission factor and convert to MT: The energy demand per acre-ft calculated above is multiplied by the emission factor for the electricity generation source and converted to MT.

$$\frac{681 \text{ kW-hr/acre-ft} \times 0.666 \text{ lbs CO}_2/\text{kW-hr}}{2204.62 \text{ lbs/ton}} = 0.21 \text{ MT CO}_2/\text{acre-ft}$$

The anticipated annual water demand will be multiplied by these values and then combined this with the calculated emission factor yields total annual emissions from irrigation of the golf course. Other outdoor land uses that require irrigation can follow a similar procedure.

5.10.3 Calculating CO₂ Emissions from Maintenance of the Golf Course

Maintenance emissions include the emissions resulting from the mowing of turf grass. The release of GHGs due to mowing was calculated in three steps:

1. Identify the area of turf and frequency of mowing.
2. Identify the efficiency of a typical mower.

⁴³ Full Coverage Irrigation. Partial List of Customers Using FCI Nozzles. <http://www.fcinozzles.com/clients.asp>.

⁴⁴ Conversion factor: 1 psi = 2.31 feet of head. Kele & Associates Technical Reference: Liquid Level Measurement. <http://www.kele.com/tech/monitor/Pressure/LiqLevMs.pdf>

⁴⁵ Kansas State University Irrigation Management Series. Comparing Irrigation Energy Costs. Table 4. <http://www.oznet.ksu.edu/library/ageng2/mf2360.pdf>

3. Calculate the emissions associated with mowing.

1. *Identify the area of turf and frequency of mowing:* An Arizona State economic analysis of golf courses reports that on average 2/3 of the land within a golf course is maintained.⁴⁶ ENVIRON suggests assuming that the course will be mowed twice weekly, although high maintenance areas such as greens will be mowed more frequently.⁴⁷ ENVIRON recommends a growing season of 52 weeks/year.⁴⁸

2. *Identify the efficiency of a typical mower.* Typical mower calculations are based on the specifications for a lightweight fairway mower (model 3235C) reported by John Deere's Golf & Turf division.⁴⁹ A typical mower will use one tank (18 gallons) of diesel per day (assumed to be 8 hours). Given the size specifications of the mower and assuming an average speed of 5.5 mph, such a mower can cover 44 acres on 18 gallons of diesel.

3. *Calculate the emissions associated with mowing.* Using the information collected above and a CO₂ emission factor for diesel combustion⁵⁰, ENVIRON calculates the emission factor for mowing the golf course:

$$2 \frac{\text{mowings}}{\text{week}} \times 52 \frac{\text{weeks}}{\text{year}} \times \frac{18 \text{ gallons diesel}}{44 \text{ acre-mowing}} \times \frac{22.4 \text{ lbs CO}_2/\text{gallon diesel}}{2204 \text{ lbs/ton}} = \frac{0.43 \text{ MT CO}_2}{\text{acre-year}}$$

5.10.4 Calculating CO₂ Emissions from Building Energy Use at the Golf Course

Any of the non-residential building energy use data sources described in the Buildings section may be used to estimate energy intensity at the golf course.

5.11 Pools

Recreation centers may include various pools, spas, and restroom buildings; ENVIRON assumes that pools are the main consumers of energy in recreation centers. This section describes the methods used to estimate the GHGs associated with pools in recreation centers.

The energy used to heat and maintain a swimming pool depends on several factors, including (but not limited to): whether the pool is indoors or outdoors, size of the pool (surface area and depth), water temperature, and energy efficiency of pool pump and water heater, and whether

⁴⁶ Total acreage divided by total acreage maintained. Arizona State University, Dr. Troy Schmitz. Economic Impacts and Environmental Aspects of the Arizona Golf Course Industry. <http://agb.poly.asu.edu/workingpapers/0501.pdf>.

⁴⁷ Based on Best Practices video. <http://buckeyeturf.osu.edu/podcast/?p=51>

⁴⁸ Based on 95% of Southern California Survey respondents report an irrigation season greater than 9-10 months. <http://www.owue.water.ca.gov/docs/2004Apps/2004-079.pdf>

⁴⁹ John Deere Product Specifications. 3235C Lightweight Fairway Mower. http://www.deere.com/en_US/ProductCatalog/GT/series/gt_lwfm_c_series.html

⁵⁰ EIA. Fuel and Energy Source Codes and Emission Coefficients. <http://www.eia.doe.gov/oiaf/1605/factors.html>

solar heating is used. By making assumptions for these parameters and using known or predicted values for energy use, ENVIRON estimates the electricity and natural gas use of an outdoor pool.

5.11.1 Recreation Center Characterization

In the calculations described below, ENVIRON assumes that the proposed pools will be outdoor pools with dimensions 50 meters by 22.9 meters (a typical, competition-size pool). ENVIRON bases electricity calculations on a pool that ran its standard water filter for 24 hours per day, 365 days per year. As there is little data publicly available on the energy use of commercial swimming pools, ENVIRON extrapolates energy consumption from information obtained from two sources: 1) Data on electricity used by pool pumps from Pacific Gas and Electric (PG&E),⁵¹ and 2) Data on the annual cost to heat a commercial pool located in Carlsbad, CA.⁵²

5.11.2 Electricity Use of Pools

A PG&E study on energy efficiency of a pool pump at the Lyons Pool in Oakland, CA, found an annual electricity use of 110,400 kilowatt hours per year (kWh per yr).⁵³ The study pool is smaller than the assumed size of the proposed pool (actual size of the Lyons Pool is 35 yards by 16 yards). Accordingly, ENVIRON scales the electricity use to reflect the larger size of the proposed pool.

5.11.3 Natural Gas Use of Pools

The estimated annual cost of heating a standard competition-size pool is \$184,400 (or 72% of the total cost of pool operations).⁵⁴ ENVIRON used the average PG&E commercial rate for natural gas of \$0.95 per therm to convert this cost into annual natural gas use (hundred cubic feet per year [ccf/year]).⁵⁵ The commercial rate averages the variable cost due to energy usage and time of year. This corresponds to approximately 184,400 ccf per year.⁵⁶

This value is comparable to that obtained from the pool industry.⁵⁷ The estimated cost of heating a residential pool using a natural gas heater is about one dollar per square foot of water

⁵¹ PG&E. 2006. Energy Efficient Commercial Pool Program, Preliminary Facility Report. Lyons Pool, "City of Oakland/Oakland Unified School District." October.

⁵² Mendioroz, R. 2006. Fueling Change: A Number of Design Schemes and Alternative-Energy Strategies Can Help Operators Beat the Price of Natural Gas. Athletic Business. March.

⁵³ PG&E. 2006. Energy Efficient Commercial Pool Program, Preliminary Facility Report. Lyons Pool, "City of Oakland/Oakland Unified School District." October.

⁵⁴ Mendioroz, R. 2006. Fueling Change: A Number of Design Schemes and Alternative-Energy Strategies Can Help Operators Beat the Price of Natural Gas. Athletic Business. March.

⁵⁵ Pacific Gas and Electric (PG&E). 2007. Gas Rate Finder. Vol 36-G, No. 9. September. <http://www.pge.com/tariffs/GRF0907.pdf>

⁵⁶ At the commercial rate given 1 ccf costs \$1.

⁵⁷ SolarCraft Services Inc. 2007. Phone conversation with Chris Bumas on September 18, 2007. Novato, CA <http://www.solarcraft.com/>

surface area per month (\$/sqft-month) in residential therms.⁵⁸ Applying this value to a competition-size pool yields an annual natural gas use of 147,600 ccf/year.

5.11.4 Conversion of Electricity and Natural Gas Use to Greenhouse Gas Emissions

ENVIRON used utility-specific electricity and natural gas emission factors to calculate the total CO₂ emissions for each pool. A summary of the calculations is shown below:

$$\text{Emissions from Electricity} \left(\frac{\text{Tonnes CO}_2 / \text{yr}}{1,000 \text{ sqft}} \right) = \frac{\text{Energy Use (ccf / yr)} \times \text{Emission Factor (lbs CO}_2 \text{ e / ccf)} \times \text{Conversion Factor (tonne / 2205 lbs)}}{\text{Surface Area of Pool (1,000 sqft)}}$$

$$\text{Emissions from Natural Gas} \left(\frac{\text{Tonnes CO}_2 / \text{yr}}{1,000 \text{ sqft}} \right) = \frac{\text{Energy Use (ccf / yr)} \times \text{Emission Factor (lbs CO}_2 \text{ e / ccf)} \times \text{Conversion Factor (tonne / 2205 lbs)}}{\text{Surface Area of Pool (1,000 sqft)}}$$

⁵⁸ The residential price for one therm of natural gas.



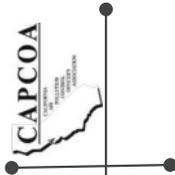
Appendix C

Transportation Appendices



Appendix C.1

Transportation Calculations



Appendix C

Appendix C.1 – Transportation Calculations

Table C-1 provides further detail into the calculations of percent reduction in vehicle miles traveled (VMT) for each of the fact sheets (that have references to the appendix). Many of the strategies in the table below do not provide the full equations for percent reduction in vehicle miles traveled. Only the equations or variables which require further detail are outlined here. The table also provides detail on any assumptions which are made to perform the calculations and the basis of such assumptions. An additional section below Table C-1 provides a detailed discussion of the calculations made for the transit accessibility strategy.

Table C-1 Transportation Calculations					
Strategy	T#	Equation	Variable	Value	Source/Notes
Increase Density (Land Use/Location)	A2	$A = \frac{\text{Percentage increase in housing units per acre} - (\text{number of housing units per acre} - \text{number of housing units per acre for typical ITE development})}{(\text{number of housing units per acre for typical ITE development})}$	number of housing units per acre for typical ITE development	7.6 = blended average density of residential development in the US in 2003	A.C. Nelson, "Leadership in a New Era," <i>Journal of the American Planning Association</i> , Vol. 72, Issue 4, 2006, pp. 393-407 – as cited in <i>Growing Cooler</i>
		$A = \frac{\text{Percentage increase in jobs per job acre} - (\text{number of jobs per job acre} - \text{number of jobs per job acre for typical ITE development})}{(\text{number of jobs per job acre for typical ITE development})}$	number of jobs per job acre for typical ITE development	20 = average jobs per job acre	Year 2005 Land Use, Sacramento County Travel Demand Model, 2008
Improve Design of Development (Land Use/Location)	A3	$A = \frac{\text{Percentage increase in intersections versus a typical ITE suburban development} - (\text{intersections per square mile of project} - \text{intersections per square mile of typical ITE suburban development})}{(\text{intersections per square mile of typical ITE suburban development})}$	intersections per square mile of typical ITE suburban development	36 = ITE site average intersection density	Based on Fehr & Peers methodology for analysis in the report: <i>Proposed Trip Generation, Distribution, and Transit Mode Split Forecasts for the Bayview Waterfront Project Transportation Study</i> , Fehr & Peers, 2009



Table C-1 Transportation Calculations						
Strategy	T#	Equation	Variable	Value	Source/Notes	
Increase Diversity (Mixed Use) (Land Use/Location)	A5	A = Percentage increase in land use index versus single use development = (project land use index - single land use index) / single land use index	single land use index	$0.15 = - [1 * (\ln 1) + 0.01 * (\ln 0.01) + \dots + 0.01 * (\ln 0.01)] / \ln(6)$	--	
Increase Destination Accessibility (Land Use/Location)	A6	A = Percentage decrease in distance to downtown or major job center = (distance to downtown/job center for typical ITE development - distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)	distance to downtown/job center for typical ITE development	12 miles (average work trip length from NHTS)	2000-2001 California Statewide Travel Survey, 2001 NHTS Summary of Travel Trends, p.15 (Table 5)	
Increase Transit Accessibility (Land Use/Location)	A7	A = Increase in transit mode share = % transit mode share for project - % transit mode share for typical ITE development	% transit mode share for typical ITE development	1.3%	NHTS, 2001 http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/Final2001_StwTravelSurveyWkdayRpt.pdf, p.150 (Suburban - SCAG, SANDAG, Fresno County.)	
		B = Adjustment from transit mode share to VMT = 1 / average vehicle occupancy * conversion from VT to VMT = 0.67	Divide by average vehicle occupancy to translate to VT conversion from VT to VMT	1 / average vehicle occupancy = 1 / 1.5 = 0.67 1	NHTS, http://www.dot.ca.gov/hq/tsip/tab/documents/travelsurveys/2000_Household_Survey.pdf, p.iii Assume all trip lengths are equal (vehicle trips to VMT) ¹	

¹ To convert to vehicle miles traveled, we assume that all vehicle trips will average out to typical trip length ("assume all trip lengths are equal"). Thus, we can assume that a percentage reduction in vehicle trips will equal the same percentage reduction in vehicle miles traveled.



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Table C-1 Transportation Calculations						
Strategy	T#	Equation	Variable	Value	Source/Notes	
Unbundle Parking Cost from Property Cost (Parking Pricing/Policy)	C3	A = Adjustment from Vehicle Ownership to VMT = average trips per 2 vehicles * 1 vehicle per average trips = (9.8 trips / 2 vehicles) * (1 vehicle / 5.7 trips) = 0.85	Average trips per X vehicles	Households with 2 vehicles take 9.8 trips while households with 1 vehicle take 5.7 trips per day	i.e. A reduction of 1 vehicle leads to an 0.85 reduction in vehicle trips http://www.dot.ca.gov/hq/tsp/tab/documents/travel_surveys/2000_Household_Survey.pdf , table 8.7	
Expand Transit Network (Transit System Improvements)	D2	D = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility	
Enhance Transit Service Frequency/Speed (Transit System Improvements)	D3	E = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility	
Implement Bus Rapid Transit (Transit System Improvements)	D4	D = Adjustment for Transit Ridership Increase to VMT	--	0.67	see Increase Transit Accessibility	
Implement Required Trip Reduction Programs (Trip Reduction Programs)	E2	C = Adjustment from vehicle mode share to commute VMT	--	1	Assume all trip lengths are equal (vehicle mode share to vehicle trips to VMT) ⁱ	
Provide a Transit Fare Subsidy (Trip Reduction Programs)	E3	C = Adjustment from commute VT to commute VMT	--	1	Assume all trip lengths are equal (vehicle trips to VMT) ⁱ	
Implement Commute Trip Reduction Marketing (Trip Reduction Programs)	E7	C = Adjustment from commute VT to commute VMT	--	1	Assume all trip lengths are equal (vehicle trips to VMT) ⁱ	

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Appendix C.1



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Table C-1 Transportation Calculations					
Strategy	T#	Equation	Variable	Value	Source/Notes
Provide Employer-Sponsored Vanpool/Shuttle (Trip Reduction Programs)	E8	C = Adjustment from vanpool mode share to commute VMT	--	0.67	see Increase Transit Accessibility
		% VMT Reduction = A * B * C = 2% * 7% * 20% = 0.03%	--	--	--
Implement Bike-Sharing Programs (Trip Reduction Programs)	E10	A = 2% = Net new bicycle mode share = (existing mode share * % increase in bicycle mode share) - existing mode share	Existing mode share	Estimate at 1%	Pucher et al., 2010
		B = % of new bicycle trips shifting from vehicles (from literature)	% increase in bicycle mode share	135 - 300%	Pucher et al., 2010, Table 4 (see fact sheet for calculations)
			--	6-7%	Pucher et al., 2010 and Bike-Share in NYC, 2009, Table 4, p.45
			adjustments to convert from vehicle mode share to VMT	1	Assume all trip lengths are equal (vehicle mode share to vehicle trips to VMT) ¹
		C = adjustments to convert from vehicle mode share to VMT * adjustment for shorter than average trip lengths = 1*20%	adjustment for shorter than average trip lengths	1.94/9.9 = 20%	Adjustment to reflect ratio of bike trip length to average trip length (this strategy will only replace the shorter vehicle trips that can be reasonably replaced by a bicycle). [1.94 miles (average bike trip length from Moving Cooler Appendices B-28 referencing NHTS) / 9.9 miles (average household trip length from NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx)]



Appendix C

Table C-1 Transportation Calculations						
Strategy	T#	Equation	Variable	Value	Source/Notes	
Provide End of Trip Facilities (Trip Reduction Programs)	E11	*utilizing the same equation in bike sharing program section, set A = $1.3\% = (7.1\% - 5.8\%)$ % VMT Reduction = $A * B * C = 1.3\% * 7\% * 20\% = 0.02\%$	--	--	--	
Establish Schoolpool (Trip Reduction Programs)	E13	B = Adjustments to convert from participation to daily VMT to annual school VMT = $[\text{avg \# of families per carpool} - 1] / \text{avg \# of families per carpool} * \% \text{ of school days}$	avg # of families per carpool	2.5	TDM Case Studies, DRCOG, p.13	
Provide School Buses (Trip Reduction Programs)	E14	B = Adjustments to convert from participation to daily VMT to annual school VMT = $\% \text{ of school days}$	% of school days	75% = 39 school weeks/ 52 weeks 75% = 39 school weeks/ 52 weeks	TDM Case Studies, DRCOG, p.13 TDM Case Studies, DRCOG, p.13	
Cordon Pricing (Road Pricing Management)	F2	A = % increase in pricing for passenger vehicles to cross cordon C = % of VMT Impacted by Cordon Pricing and Mode Shift Adjustments = $\% \text{VMT impacted by congestion pricing} * \text{Mode shift adjustment} = 8.8\% \text{ (peak period) and } 21\% \text{ (all day)}$	--	100 – 500%	<i>Moving Cooler</i> uses peak hour price per mile instead of crossing price. The percentage change can still be calculated to provide a general estimate for a high range % change. Assuming a baseline of \$0.10, calculated percentage increase to \$0.49 - \$0.65 (<i>Moving Cooler</i>) and adjusted with rounding	



Table C-1 Transportation Calculations					
Strategy	T#	Equation	Variable	Value	Source/Notes
			%VMT impacted by congestion pricing	25%	20% of trips are work trips (NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx) and round up assuming other trips travel during peak periods
		Peak period = 25% * 35% = 8%	Mode shift adjustment	35% = 20% + 30%/2	Of the estimated trips affected to the increase in price, assume 50% is either a time of day shift/route shift/no change, 30% convert to HOV trips (with average 2 ppl per HOV), and 20% are trip reductions/shift to transit, walk or bike
		Static all day price (London) = 60% * 35% = 21%	% VMT impacted by congestion pricing	60%	Conservatively assume 60% of trips fall in the peak periods and mid-day
			Mode shift adjustment	35%= 20% + 30%/2	Of the estimated reduced trips due to the increase in price, assume 50% is either a time of day shift/route shift/no change, 30% convert to HOV trips (with average 2 people per HOV), and 20% are trip reductions/shift to transit, walk or bike

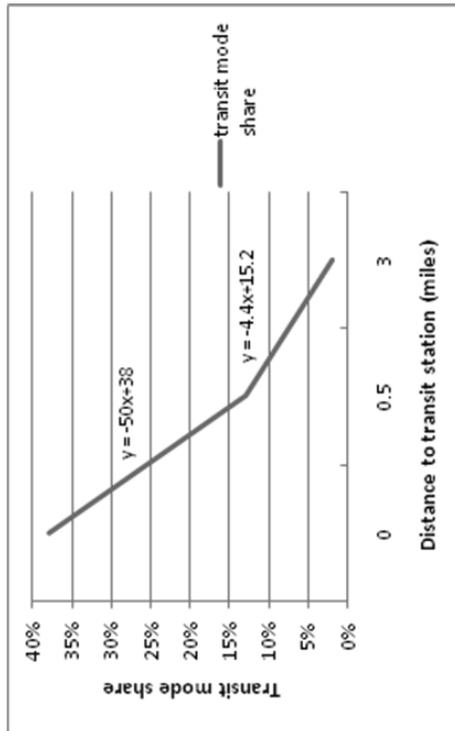
Increase Transit Accessibility (Land Use/Location)

Distance to transit	Transit mode share calculation equation (where x = distance of project to transit)
0 – 0.5 miles	-50*x + 38



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0.5 to 3 miles	$-4.4 * x + 15.2$
> 3 miles	no impact
Source: Lund et al, 2004; Fehr & Peers 2010	



Data was taken from Table 5-25 of Lund et al, 2004. The table provided transit commute mode shares for those living with 1/2 mile of a rail station for 5 sites surveyed within California. Removing the extreme low and high percentages, this provided a range of transit commute mode share of 13% to 38%. A simple linear extrapolation was conducted to provide a relationship for distance to transit (between 0 and 1/2 mile) to transit mode share, via the equation: transit mode share = $-50 * \text{distance to transit} + 38$. The table also provided transit mode shares for those living from 1/2 to 3 miles from a station, a range from 2% to 13%. Using the same methodology, a relationship for distance to transit (between 1/2 mile and 3 miles) to transit mode share is provided via the equation: transit mode share = $-4.4x + 15.2$.



Appendix C

Appendix C.2
Trip Adjustment Factors

Appendix C.2 – Trip Adjustment Factors

The trip adjustment factors are not explicitly used for calculations of reduction in vehicle miles traveled (VMT) but serve as an added resource point for users of this document. For example, we report all commute trip reduction (CTR) program strategies as a percentage reduction in commute VMT. If the user would like to translate this to project level VMT (assuming the project is NOT an office park), and the user does not have statistics about the project area readily available, then the trip adjustment factors table can be utilized.

Example: Assume the user is providing a 15% reduction in commute VMT for a implementation of a ride share program. To calculate an estimated reduction in project level VMT, the user can multiple 15% by 20% (NHTS average % of work trips) and again multiply by 12.0 / 9.9 (average work trip length/average trip length) to adjust for both the portion of trips which are work related and that work trips tend to be longer than average trips.

TABLE C-2. TRIP ADJUSTMENT FACTORS				
	NHTS ¹	Sacramento Region ²	San Diego Region ³	Rural (Kings County, CA) ⁴
Average Work Trip Length (vehicle)	12.0	10.4	8.4	-
Average Trip Length (vehicle)	9.9	6.8	6.9	8.7
Average % of Work Trips	20%	20%	-	12%
Average % of School Trips	9.8%	-	-	-
Average Length of School Trips (Vehicle)	6.0	-	4.2	-
Average Vehicle Occupancy (All Trips)	1.5	1.4	1.5	-
Source: 1. 2000-2001 California Statewide Travel Survey, 2001 NHTS Summary of Travel Trends 2. SACMET model, Fehr & Peers, 2010. 3. SANDAG Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002) 4. NHTS Transferability, 2001 NHTS, http://nhts-gis.ornl.gov/transferability/Default.aspx				



Appendix C



Appendix C.3
Induced Travel Memo



MEMORANDUM

Date: February 3, 2010

To: CAPCOA Team

From: Tien-Tien Chan, Jerry Walters, and Meghan Mitman

Subject: Induced Travel Material

SF10-0475

Induced travel is a term used to describe how travel demand responds to roadway capacity expansion and roadway improvements. Consistent with the theory of supply and demand, the general topic of research concerning induced travel is that reducing the cost of travel (i.e., reduced travel time due to a new road improvement) will increase the amount of travel. In other words, road improvements alone can prompt traffic increases. To what degree and under what circumstances these increases occur is a matter of debate and the key subject of most induced travel research. We have attached the following documents which represent research on induced travel effects:

- *Comparative Evaluations on the Elasticity of Travel Demand* – study conducted for the Utah DOT which included national literature review of induced travel studies
- *Are Induced-Travel Studies Inducing Bad Investments?* – article by Cervero in Access Magazine: Transportation Research at the University of California
- *Road Expansion, Urban Growth, Growth, and Induced Travel: A Path Analysis* – APA Journal paper by Cervero, also discusses the impacts of induced growth and induced investments

The reader should be aware that conditions may vary considerably and the extent of induced travel depends on a variety of factors, including: the degree of prior congestion in the corridor, its duration over hours of the day, its extent over lane miles of the corridor, the degree to which unserved traffic diverts to local streets and the degree of congestion on those routes, the availability of alternate modes within the corridor, whether corridor is radial and oriented toward downtown with high parking cost and limited availability or circumferential, planned level of growth in the corridor, whether the corridor is interstate or interregional, whether it is a truck route, and other factors.

GHG reduction strategies such as transportation system management (e.g. signal coordination, adaptive signal control) may also have the potential for inducing travel. For such strategies, if the estimated improvement exceeds 10% benefit in travel time reduction, we recommend conducting project specific analysis on induced travel prior to establishing GHG reduction benefits.

332 Pine Street, 4th Floor, San Francisco, CA 94104 (415) 348-0300 Fax (415) 773-1790

www.fehrandpeers.com

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Appendix D

Building Mitigation Measure Quantification Methods



This Appendix summarizes the steps and assumptions used in two of the mitigation strategies – exceed Title 24 energy efficiency standards (BE-1) and installing energy efficient appliances (BE-4).

Background

GHGs are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New California buildings must be designed to meet the building energy efficiency standards of Title 24, also known as the California Building Standards Code. Title 24 Part 6 regulates energy uses including space heating and cooling, hot water heating, ventilation, and hard-wired lighting. By committing to a percent improvement over Title 24, a development reduces its energy use and resulting GHG emissions.

The Title 24 standards have been updated twice (in 2005 and 2008)¹ since some of these data used to estimate energy use were compiled. California Energy Commission (CEC) has published reports estimating the percentage deductions in energy use resulting from these new standards. Based on CEC's discussion on average savings for Title 24 improvements, these CEC savings percentages by end use can be used to account for reductions in electricity and natural gas use due to the two most recent updates to Title 24. Since energy use for each different system type (ie, heating, cooling, water heating, and ventilation) as well as appliances is defined in this survey, the use of survey data with updates for Title 24 will easily allow for application of mitigation measures aimed at reducing the energy use of these devices in a prescriptive manner.

Another mitigation measure to reduce a building's energy consumption as well as the associated GHG emissions from natural gas combustion and electricity production is to use energy-efficient appliances. For residential dwellings, typical builder-supplied appliances include refrigerators and dishwashers. Clothes washers and ceiling fans would be applicable if the builder supplied them. For commercial land uses, only energy-efficient refrigerators have been evaluated for grocery stores.

¹ California Energy Commission. 2003. Impact Analysis: 2005 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings. Available at:

http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF
California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at:
<http://www.energy.ca.gov/ceus/>



Methodology

Datasets

The Residential Appliance Saturation Survey (RASS)² and California Commercial Energy Use Survey (CEUS)³ datasets were used to estimate the energy intensities of residential and non-residential buildings, respectively, since the data is available for several land use categories in different climate zones in California. The RASS dataset further differentiates the energy use intensities between single-family, multi-family and townhome residences.

The Energy Star and Other Climate Protection Partnerships 2008 Annual Report⁴ and subsequent Annual Reports were reviewed for typical reductions for energy-efficient appliances. ENERGY STAR residential refrigerators, clothes washers, dishwashers, and ceiling fans use 15%, 25%, 40%, and 50% less electricity than standard appliances, respectively. ENERGY STAR commercial refrigerators use 35% less electricity than standard appliances.

Calculations

Exceeding Title 24 Energy Efficiency Standards (BE-1)

RASS and CEUS datasets were used to obtain the energy intensities of different end use categories for different building types in different climate zones. Energy intensities from CEUS are given per square foot per year and used as presented. RASS presents Unit Energy Consumption (UEC) per dwelling unit per year and saturation values; the energy intensities used in this analysis are products of the UEC and saturation values.

Data for some climate zones is not presented in the CEUS and RASS studies. However, data from adjacent climate zones is assumed to be representative and substituted as follows:

For non-residential building types:

- Climate Zone 11 used Climate Zone 9 data.
- Climate Zone 12 used Climate Zone 9 data.
- Climate Zone 14 used Climate Zone 1 data.
- Climate Zone 15 used Climate Zone 10 data.

For residential building types:

- Climate Zone 6 used Climate Zone 2 data.
- Climate Zone 14 used Climate Zone 1 data.
- Climate Zone 15 used Climate Zone 10 data.

RASS and CEUS data are based on 2002 consumption data. Because older buildings tend to be less energy efficient, and the majority of the buildings in the survey were likely constructed

2 California Statewide Residential Appliance Saturation Study Reporting Center. Available at: <http://websafe.kemainc.com/RASSWEB/DesktopDefault.aspx>

3 California Energy Commission. 2006. California Commercial End-Use Survey. Prepared by Itron Inc. Available at: <http://www.energy.ca.gov/ceus/>

4 United States Environmental Protection Agency 2009. ENERGY STAR and Other Climate Protection Partnerships: 2008 Annual Report. Available at: <http://www.epa.gov/cpd/pdf/2008AnnualReportFinal.pdf>

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before 2001, the RASS and CEUS data likely overestimate energy use for a 2001 Title 24-compliant building.

To account for updates since the 2001 Title 24 standards, percentage reductions for each end use category taken directly from the CEC's "Impact Analysis for 2005 Energy Efficiency Standards" and "Impact Analysis 2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings" reports were applied to the CEUS and RASS datasets for improvements from 2001 to 2005, and 2005 to 2008, respectively (see Tables D-1 and D-2). For the CEUS data, exterior lighting was assumed to be covered by Title 24 lighting and therefore has the full percentage reductions taken. Interior lighting was assumed to be 50% Title 24 and 50% non-Title 24 uses. Therefore only half of the reduction for lighting was applied. The resulting 2008 numbers were then used as baseline energy intensities for this mitigation strategy. The total baseline energy intensities are calculated as follows:

$$\text{Baseline} = \sum [T24_{2001} \times (1 - R_{2001-2005}) \times (1 - R_{2005-2008})] + \sum NT24$$

Where:

- Baseline = Total baseline energy intensities of building category
- T24₂₀₀₁ = Energy intensities of Title 24 regulated end use from RASS or CEUS
- R₂₀₀₁₋₂₀₀₅ = Reduction from 2001 to 2005
- R₂₀₀₅₋₂₀₀₈ = Reduction from 2005 to 2008
- NT24 = Non-Title 24 regulated end use energy intensities

Table D-1
 Reduction in Title 24 Regulated End Use for Non-Residential Buildings

Energy Source	End Use	Reduction from 2001 to 2005	Reduction from 2005 to 2008
Electricity	Heating	4.9%	37.2%
	Ventilation	5.0%	1.5%
	Refrigeration	0.0%	0.0%
	Process	0.0%	0.0%
	Office Equipment	0.0%	0.0%
	Motors	0.0%	0.0%
	Miscellaneous	0.0%	0.0%
	Interior Lighting	4.9%	5.9%
	Water Heating	0.0%	0.0%
	Cooking	0.0%	0.0%
	Air Compressors	0.0%	0.0%
	Cooling	6.7%	8.3%
	Exterior Lighting	9.8%	11.7%
Natural Gas	Cooking	0.0%	0.0%
	Cooling	10.4%	9.3%
	Heating	3.1%	15.9%
	Water Heating	0.0%	0.0%
	Process	0.0%	0.0%
	Miscellaneous	0.0%	0.0%

Table D-2
Reduction in Title 24 Regulated End Use for Residential Buildings

Energy Source	End Use (As presented in RASS Dataset)	Reduction from 2001 to 2005			Reduction from 2005 to 2008		
		Multi-family	Single family	Town home	Multi-family	Single family	Town home
Electricity	Conv. Electric heat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	HP Eheat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Aux Eheat	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Furnace Fan	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Central A/C	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Room A/C	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Evap Cooling	24.3%	19.8%	24.3%	19.7%	22.7%	19.7%
	Water Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Solar Water Heater	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Dryer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Clothes Washer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Dish Washer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	First Refrigerator	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Second Refrigerator	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Freezer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pool Pump	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Outdoor Lighting	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Range/Oven	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	TV	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa Electric Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Microwave	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Home Office	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	PC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Water Bed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Well Pump	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Miscellaneous	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Natural Gas	Primary Heat	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Auxiliary Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Conv. Gas Water Heat	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Solar Water Heat w/Gas Backup	15.7%	6.7%	15.7%	7.0%	10.0%	7.0%
	Dryer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Range/Oven	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pool Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Spa Heat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Miscellaneous	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



The same approach was used to quantify GHGs emission reduction from exceeding Title 24 energy efficiency standards by 1%. The 1% reduction was applied to only energy use intensities for Title 24 regulated end use categories. For the CEUS data, the reduction was not applied to any portion of interior lighting. The reduced energy use intensities were added to the unadjusted energy use intensities for non-Title 24 regulated end use categories to obtain the total energy use intensities for exceeding Title 24 energy efficiency standards by 1% for each building category. These were then compared to the baseline line energy intensities for the overall percentage reduction as follows:

$$\text{Percentage Reduction} = 1 - \frac{\sum [T24_{2001} \times (1 - R_{2001-2005}) \times (1 - R_{2005-2008}) \times 99\%] + \sum \text{NT24}}{\text{Baseline}}$$

Where:

- Baseline = Total baseline energy intensities of building category
- T24₂₀₀₁ = Energy intensities of Title 24 regulated end use from RASS or CEUS
- R₂₀₀₁₋₂₀₀₅ = Reduction from 2001 to 2005
- R₂₀₀₅₋₂₀₀₈ = Reduction from 2005 to 2008
- NT24 = Non-Title 24 regulated end use energy intensities

Installing Energy Efficient Appliances

The same baseline line energy use intensities from the Exceeding Title 24 Energy Efficiency Standards mitigation were used for this mitigation strategy. For all appliances except ceiling fan, the reductions as presented in the ENERGY STAR 2008 annual report were applied to the energy use intensities of the corresponding energy end use categories. All other end use categories were kept unadjusted. The percentage reductions were calculated as follows:

$$\text{Percentage Reduction} = 1 - \frac{\text{Appliance Intensity} \times (1 - \text{ESR}) + \sum \text{Other End Use}}{\text{Baseline}}$$

Where:

- Baseline = Total baseline energy intensities of building category
- Appliance Intensity = 2008 baseline energy intensity of appliance in consideration
- ESR = Reduction from ENERGY STAR appliance
- Other End Use = 2008 baseline energy intensity of all other end uses

RASS does not specify a ceiling fan end-use; rather, electricity use from ceiling fans is accounted for in the "Miscellaneous" category which includes interior lighting, attic fans, and other miscellaneous plug-in loads. Since the electricity usage of ceiling fans alone is not

Appendix D

specified, a value from the National Renewable Energy Laboratory (NREL) Building America Research Benchmark Definition (BARBD)⁵ was used. BARBD reported that the average energy use per ceiling fan is 84.1 kWh per year. In this mitigation measure, it was assumed that each multi-family, single-family, and townhome residence has one ceiling fan. Therefore, the 50% reduction from ENERGY STAR for ceiling fan was applied to 84.1 kWh of the electricity attributed to the Miscellaneous RASS category. In other words, 42.05 kWh was subtracted from the electricity end use intensities of the “Miscellaneous RASS” category in evaluating the GHGs emission reduction from installing energy efficient ceiling fans.

The total energy use intensities with reduction from each appliance in consideration were then compared to the baseline line energy intensities for the overall percentage reduction as follows:

$$\text{Percentage Reduction} = 1 - \frac{(\text{Misc} - 42.05) + \sum \text{Other End Use}}{\text{Baseline}}$$

Where:

- Baseline = Total baseline energy intensities of building category
- Misc = 2008 energy intensity in Miscellaneous category for electricity
- Other End Use = 2008 baseline energy intensity of all other end uses

5 NREL. 2010. Building America Research Benchmark Definition. Available online at: <http://www.nrel.gov/docs/fy10osti/47246.pdf>



Appendix E

Carbon, Water and CO₂ Sequestration Intensity Factors



Appendix E

Table E-1: Carbon Intensity

Utility	CO ₂ intensity (lb/MWh) ¹										Suggested Value ²
	2000	2001	2002	2003	2004	2005	2006	2007	2007	2007	
Anaheim Public Utilities						1,399.80	1,416.74	1,543.28			1,416.74
Austin Energy						1,127.37	1,077.97	1,117.37			1,077.97
City and County of San Francisco						76.28					76.28
City of Palo Alto Public Utilities						320.94	39.02	426.82			39.02
Glendale Water & Power						1,065.00					1,065.00
Los Angeles Department of Water & Power	1,407.44	1,403.39	1,348.48	1,360.07	1,360.60	1,303.58	1,238.52	1,227.89			1,238.52
Pacific Gas & Electric Company					566.2	489.16	455.81	635.67			455.81
PacifiCorp					1,811.00	1,812.22	1,747.30	1,775.28			1,747.30
Pasadena Water & Power						1,409.65	1664.14				1,664.14
Platte River Power Authority						1,970.93	1,955.66	1,847.88			1,955.66
Riverside Public Utilities						1,333.45	1,346.15	1,325.65			1,346.15
Roseville Electric							565.52	793.8			565.52
Sacramento Municipal Utility District					769	616.07	555.26	714.31			555.26
Salt River Project							1,546.28	1,469.90			1,546.28
San Diego Gas & Electric					613.75	546.46	780.79	806.27			780.79
Seattle City Light								17.77			17.77
Sierra Pacific Resources								1,442.78			1,442.78
Southern California Edison					678.88	665.72	641.26	630.89			641.26
Turlock Irrigation District							682.48	807			682.48

Notes:

1. Based on Table G6 of Local Government Operation Protocol version 1.1
2. The suggested values are based on 2006. If no 2006 value was available, 2005 was used followed by 2007.

**Table E-2: Water Intensity**

	Indoor Water Uses		Outdoor Water Uses	
	Northern California	Southern California	Northern California	Southern California
	kWh/MG			
Water Supply and Conveyance	2,117	9,727	2,117	9,727
Water Treatment	111	111	111	111
Water Distribution	1,272	1,272	1,272	1,272
Wastewater Treatment	1,911	1,911	0	0
Regional Total	5,411	13,022	3,500	11,111

Note: Based on Table ES-1 from CEC. 2006. Refining Estimates of Water-Related Energy Use in California, CEC-500-2006-118.

Table E-3: Default CO₂ Sequestration Accumulation

Land Use	Sub-Category	Default annual CO ₂ accumulation per acre ¹ (tonnes CO ₂ /year)
Forest Land	Scrub	14.3
	Trees	
Cropland		111
Grassland	--	6.2
Wetlands	--	4.31

Note: Based on Tables 4.3, 4.7 and 6.4 from IPCC. 2006. Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines). Available online at <http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm>

Greenhouse Gas CEQA
Significance Threshold
Stakeholder Working Group #14

November 19, 2009

SCAQMD

Diamond Bar, California

Agenda Item #2 - Proposed Residential/Commercial Thresholds – Screening Values (Tier III)

- Staff GHG ST recommendation – two options
- Lead agencies would select 1 of the 2 options:
 - ✓ GHG ST Option #1: By land use type
 - Residential: 3500 tpy CO2e
 - Commercial: 1400 tpy CO2e
 - Mixed use: 3000 tpy CO2e
 - ✓ GHG ST Option #2: Combined approach (all 3 land use types)
 - 3000 tpy CO2e for all land use projects

Agenda Item #2 – Proposed Residential/Commercial Thresholds – Screening Values (Tier III) (Concluded)

- OPR 2007-2008 database of 711 projects survey results:
 - ✓ GHG STs based on 90% emission capture rate
 - ✓ Project capture rate Option 1
 - Residential = 34 %
 - Commercial = 39%
 - Mixed use = 34%
 - ✓ Project capture rate Option 2 = 34%
- 17% (120 projects) more EIRs prepared (assumes no additional GHG mitigation measures)

Agenda Item #3 – Proposed Performance Standards (Tier IV)

- Tier IV Compliance Option #1: Reduction Target (%)
 - ✓ Max % reduction (land use sector reduction- 23.9%, Scoping Plan overall reduction-28%)
 - ✓ Target updated as AB32 Scoping Plan revised
 - ✓ Residual emissions not to exceed 25,000 mty CO₂e
 - ✓ Base case scenario to be defined

BAAQMD Table 3 – 2020 Land Use Sector GHG Emission Reductions from State Regulations and AB 32 Measures

Affected Emissions Source	California Legislation	% Reduction from 2020 GHG inventory	End Use Sector (% of Bay Area LU Inventory)	Scaled % Emissions Reduction (credit)
Mobile	AB 1493 (Pavley)	19.7%	On road passenger/light truck transportation (45%)	8.9%
	LCFS	7.2%	On road passenger/light truck transportation (45%)	3.2%
	LCFS	7.2%	On road Heavy/Medium Duty Transportation (5%)	0.4%
Area	Heavy/Medium Duty Efficiency	2.9%	On road Heavy/Medium Duty Transportation (5%)	0.2%
	Passenger Vehicle Efficiency	2.8%	On road passenger/light truck transportation (45%)	1.3%
	Energy-Efficiency Measures	9.5%	Natural gas (Residential, 10%)	1.0%
	Energy-Efficiency Measures	9.5%	Natural gas (Residential, 10%)	1.0%
	Renewable Portfolio Standard	21.0%	Electricity (excluding cogen) (17%)	3.5%
	Energy-Efficiency Measures	15.7%	Electricity (26%)	4.0%
Indirect	Solar Roofs	1.5%	Electricity (excluding cogen) (17%)	0.2%
Total credits given to land use-driven emission inventory sectors from Scoping Plan measures				23.9%
Notes: AB = Assembly Bill; LCFS = Low Carbon Fuel Standard; SB = Senate Bill; RPS = Renewable Portfolio Standard				

Agenda Item #3 – Proposed Performance Standards (Tier IV) (Continued)

- Tier IV Compliance Option #2: Efficiency Target
 - ✓ 4.6 mt CO₂e per SP* for project level threshold (land use emissions only) & total residual emissions not to exceed 25,000 mty CO₂e
 - ✓ 6.6 mt CO₂e per SP for plan level threshold (all sectors)
- Sample calculations

*sp (service population) = population + employment

BAAQMD Table 7 – California 2020 GHG Emissions, Population Projections and GHG Efficiency Thresholds - All Inventory Sectors

All Inventory Sectors Greenhouse Gas Emissions Target	426,500,000
Population	44,135,923
Employment	20,194,661
California Service Population (Population + Employment)	64,330,584
AB 32 Goal GHG emissions (metric tons CO₂e)/SP¹	6.6
<small>Notes: AB = Assembly Bill; CO₂e = carbon dioxide equivalent; GHG = greenhouse gas; SP = service population. ¹ Greenhouse gas efficiency levels were calculated using only the “land use-related” sectors of ARB’s emissions inventory.</small>	

Agenda Item #4 – Base Case Scenario

- Pre-defined to avoid gaming the system
 - ✓ Final project type
 - ✓ Final project location
 - ✓ Same projected future year inventory methodology and assumptions as the most recent AB32 Scoping Plan for estimating project emissions
 - ✓ Vehicle trips, trip lengths, and density
- Base case derived using land use emission calculation models with default emission rates (pre-AB32 Scoping Plan)

Comparison Between SCAQMD & BAAQMD Proposed GHG STs (MTCO_{2e}/yr)

Category	SCAQMD	BAAQMD
Construction	30-yr amortization applied to operational ST	None recommended at this time
Stationary Sources Operation	10,000	10,000
Land Use Projects		
Numerical (Tier 3)	R = 3,500; C = 1,400; M = 3,000 Or RCM = 3,000	RCM = 1,100
Performance Std (Tier 4)		
Compliance Option #1 - % Reduction	28%	None
Compliance Option #3 - GHGs/unit		
Project Level	4.6/SP/yr	4.6/SP/yr
General Plans, etc.	6.6/SP/yr	6.6/SP/yr
Maximum Emission Limit	25,000	None
R = Residential; C = Commercial; M = Mixed Use; SP = Service Population (jobs + residents)		

Agenda Items #5, #6, & #7

- Other topics?
- Closing remarks
- Other business
- Next working group meeting scheduled for
12/17/09, 10:00 a.m.

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement (“Agreement”) is entered into by and between the City of Stockton (“City”), Edmund G. Brown Jr., Attorney General of California, on behalf of the People of the State of California (“Attorney General”), and the Sierra Club, and it is dated and effective as of the date that the last Party signs (“Effective Date”). The City, the Attorney General, and the Sierra Club are referred to as the “Parties.”

RECITALS

On December 11, 2007, the City approved the 2035 General Plan, Infrastructure Studies Project, Bicycle Master Plan, Final Environmental Impact Report (“EIR”), and Statement of Overriding Considerations. The General Plan provides direction to the City when making land use and public service decisions. All specific plans, subdivisions, public works projects, and zoning decisions must be consistent with the City’s General Plan. As adopted in final form, the General Plan includes Policy HS-4.20, which requires the City to "adopt new policies, in the form of a new ordinance, resolution, or other type of policy document, that will require new development to reduce its greenhouse gas emissions to the extent feasible in a manner consistent with state legislative policy as set forth in Assembly Bill (AB) 32 (Health & Saf. Code, § 38500 et seq.) and with specific mitigation strategies developed by the California Air Resources Board (CARB) pursuant to AB 32[.]” The policy lists the following "potential mitigation strategies," among others, for the City to consider:

- (a) Increased density or intensity of land use, as a means of reducing per capita vehicle miles traveled by increasing pedestrian activities, bicycle usage, and public or private transit usage; and
- (b) Increased energy conservation through means such as those described in Appendix F of the State Guidelines for the California Environmental Quality Act.

The 2035 General Plan also includes other Policies and goals calling for infill development, increased transit, smart growth, affordable housing, and downtown revitalization.

In December 2006, in accordance with the requirements of the California Environmental Quality Act (“CEQA”), the City prepared and circulated a Draft EIR. Comments were received on the EIR; the City prepared responses to these comments and certified the EIR in December 2007.

On January 10, 2008, the Sierra Club filed a Petition for Writ of Mandate in San Joaquin County Superior Court (Case No. CV 034405, hereinafter “Sierra Club Action”),

alleging that the City had violated CEQA in its approval of the 2035 General Plan. In this case, the Sierra Club asked the Court, among other things, to issue a writ directing the City to vacate its approval of the 2035 General Plan and its certification of the EIR, and to award petitioners' attorney's fees and costs.

The Attorney General also raised concerns about the adequacy of the EIR under CEQA, including but not limited to the EIR's failure to incorporate enforceable measures to mitigate the greenhouse gas ("GHG") emission impacts that would result from the General Plan.

The City contends that the General Plan and EIR adequately address the need for local governments to reduce greenhouse gas ("GHG") emissions in accordance with Assembly Bill 32, and associated issues of climate change.

Because the outcome of the Parties' dispute is uncertain, and to allow the Stockton General Plan to go forward while still addressing the concerns of the Attorney General and the Sierra Club, the Parties have agreed to resolve their dispute by agreement, without the need for judicial resolution.

The parties want to ensure that the General Plan and the City's implementing actions address GHG reduction in a meaningful and constructive manner. The parties recognize that development on the urban fringe of the City must be carefully balanced with accompanying infill development to be consistent with the state mandate of reducing GHG emissions, since unbalanced development will cause increased driving and increased motor vehicle GHG emissions. Therefore, the parties want to promote balanced development, including adequate infill development, downtown vitalization, affordable housing, and public transportation. In addition, the parties want to ensure that development on the urban fringe is as revenue-neutral to the City as to infrastructure development and the provision of services as possible.

In light of all the above considerations, the Parties agree as follows, recognizing that any legislative actions contemplated by the Agreement require public input and, in some instances, environmental review prior to City Council actions, which shall reflect such input and environmental information, pursuant to State law:

AGREEMENT

Climate Action Plan

1. Within 24 months of the signing of this Agreement, and in furtherance of General Plan Policy HS-4.20 and other General Plan policies and goals, the City agrees that its staff shall prepare and submit for City Council adoption, a Climate Action Plan, either as a separate element of the General Plan or as a component of an existing General Plan element. The Climate Action Plan, whose adoption will be subject to normal requirements for compliance with CEQA and other controlling state law, shall include, at least, the measures set forth in paragraphs 3 through 8, below.

2. The City shall establish a volunteer Climate Action Plan advisory committee to assist the staff in its preparation and implementation of the Plan and other policies or documents to be adopted pursuant to this Agreement. This committee shall monitor the City's compliance with this Agreement, help identify funding sources to implement this Agreement, review in a timely manner all draft plans and policy statements developed in accordance with this Agreement (including studies prepared pursuant to Paragraph 9, below), and make recommendations to the Planning Commission and City Council regarding its review. The committee shall be comprised of one representative from each of the following interests: (1) environmental, (2) non-profit community organization, (3) labor, (4) business, and (5) developer. The committee members shall be selected by the City Council within 120 days of the Effective Date, and shall serve a one-year term, with no term limits. Vacancies shall be filled in accordance with applicable City policies. The City shall use its best efforts to facilitate the committee's work using available staff resources.

3. The Climate Action Plan shall include the following measures relating to GHG inventories and GHG reduction strategies:

- a. Inventories from all public and private sources in the City:
 - (1) Inventory of current GHG emissions as of the Effective Date;
 - (2) Estimated inventory of 1990 GHG emissions;
 - (3) Estimated inventory of 2020 GHG emissions.

The parties recognize that techniques for estimating the 1990 and 2020 inventories are imperfect; the City agrees to use its best efforts, consistent with methodologies developed by ICLEI and the California Air Resources

Board, to produce the most accurate and reliable inventories it can without disproportionate or unreasonable staff commitments or expenditures.

- b. Specific targets for reductions of the current and projected 2020 GHG emissions inventory from those sources of emissions reasonably attributable to the City's discretionary land use decisions and the City's internal government operations. Targets shall be set in accordance with reduction targets in AB 32, other state laws, or applicable local or regional enactments addressing GHG emissions, and with Air Resources Board regulations and strategies adopted to carry out AB 32, if any, including any local or regional targets for GHG reductions adopted pursuant to AB 32 or other state laws. The City may establish goals beyond 2020, consistent with the laws referenced in this paragraph and based on current science.
 - c. A goal to reduce per capita vehicle miles traveled ("VMT") attributable to activities in Stockton (i.e., not solely due to through trips that neither originate nor end in Stockton) such that the rate of growth of VMT during the General Plan's time frame does not exceed the rate of population growth during that time frame. In addition, the City shall adopt and carry out a method for monitoring VMT growth, and shall report that information to the City Council at least annually. Policies regarding VMT control and monitoring that the City shall consider for adoption in the General Plan are attached to this Agreement in Exhibit A.
 - d. Specific and general tools and strategies to reduce the current and projected 2020 GHG inventories and to meet the Plan's targets for GHG reductions by 2020, including but not limited to the measures set out in paragraphs 4 through 8, below.
4. The City agrees to take the following actions with respect to a green building program:
- a. Within 12 months of the Effective Date, the City staff shall submit for City Council adoption ordinance(s) that require:

(1) All new housing units to obtain Build It Green certification, based on then-current Build It Green standards, or to comply with a green building program that the City after consultation with the Attorney General, determines is of comparable effectiveness;

(2) All new non-residential buildings that exceed 5000 square feet and all new municipal buildings that exceed 5000 square feet to be certified to LEED Silver standards at a minimum, based on the then-current LEED standards, or to comply with a green building program that the City, after consultation with the Attorney General, determines is of comparable effectiveness;

(3) If housing units or non-residential buildings certify to standards other than, but of comparable effectiveness to, Build It Green or LEED Silver, respectively, such housing units or buildings shall demonstrate, using an outside inspector or verifier certified under the California Energy Commission Home Energy Rating System (HERS), or a comparably certified verifier, that they comply with the applicable standards.

(4) The ordinances proposed for adoption pursuant to paragraphs (1) through (3) above may include an appropriate implementation schedule, which, among other things, may provide that LEED Silver requirements (or standards of comparable effectiveness) for non-residential buildings will be implemented first for buildings that exceed 20,000 square feet, and later for non-residential buildings that are less than 20,000 and more than 5,000 square feet.

(5) Nothing in this section shall affect the City's obligation to comply with applicable provisions of state law, including the California Green Building Standards Code (Part 11 of Title 24 of the California Code of Regulations), which, at section 101.7, provides, among other things, that "local government entities retain their discretion to exceed the standards established by [the California Green Building Standards Code]."

- b. Within 18 months of the Effective Date, the City staff shall submit for City Council adoption ordinance(s) that will require the reduction of the GHG emissions of existing housing units on any occasion when a permit to make substantial modifications to an existing housing unit is issued by the City.
- c. The City shall explore the possibility of creating a local assessment district or other financing mechanism to fund voluntary actions by owners of commercial and residential buildings to undertake energy efficiency

measures, install solar rooftop panels, install “cool” (highly reflective) roofs, and take other measures to reduce GHG emissions.

- d. The City shall also explore the possibility of requiring GHG-reducing retrofits on existing sources of GHG emissions as potential mitigation measures in CEQA processes.
- e. From time to time, but at least every five years, the City shall review its green building requirements for residential, municipal and commercial buildings, and update them to ensure that they achieve performance objectives consistent with those achieved by the top (best-performing) 25% of city green building measures in the state.

5. Within 12 months of the Effective Date, the City staff shall submit for City Council adoption a transit program, based upon a transit gap study. The transit gap study shall include measures to support transit services and operations, including any ordinances or general plan amendments needed to implement the transit program. These measures shall include, but not be limited to, the measures set forth in paragraphs 5.b. through 5.d. In addition, the City shall consider for adoption as part of the transit program the policy and implementation measures regarding the development of Bus Rapid Transit (“BRT”) that are attached to this Agreement in Exhibit B.

- a. The transit gap study, which may be coordinated with studies conducted by local and regional transportation agencies, shall analyze, among other things, strategies for increasing transit usage in the City, and shall identify funding sources for BRT and other transit, in order to reduce per capita VMT throughout the City. The study shall be commenced within 120 days of the Effective Date.
- b. Any housing or other development projects that are (1) subject to a specific plan or master development plan, as those terms are defined in §§ 16-540 and 16-560 of the Stockton Municipal Code as of the Effective Date (hereafter “SP” or “MDP”), or (2) projects of statewide, regional, or areawide significance, as defined by the CEQA Guidelines (hereafter “projects of significance”), shall be configured, and shall include necessary street design standards, to allow the entire development to be internally accessible by vehicles, transit, bicycles, and pedestrians, and to allow access to adjacent neighborhoods and developments by all such modes of transportation.
- c. Any housing or other development projects that are (1) subject to an SP or MDP, or (2) projects of significance, shall provide financial and/or other

support for transit use. The imposition of fees shall be sufficient to cover the development's fair share of the transit system and to fairly contribute to the achievement of the overall VMT goals of the Climate Action Plan, in accordance with the transit gap study and the Mitigation Fee Act (Government Code section 66000, *et seq.*), and taking into account the location and type of development. Additional measures to support transit use may include dedication of land for transit corridors, dedication of land for transit stops, or fees to support commute service to distant employment centers the development is expected to serve, such as the East Bay. Nothing in this Agreement precludes the City and a landowner/applicant from entering in an agreement for additional funding for BRT.

- d. Any housing or other development projects that are (1) subject to an SP or MDP or (2) projects of significance, must be of sufficient density overall to support the feasible operation of transit, such density to be determined by the City in consultation with San Joaquin Regional Transit District officials.

6. To ensure that the City's development does not undermine the policies that support infill and downtown development, within 12 months of the Effective Date, the City staff shall submit for City Council adoption policies or programs in its General Plan that:

- a. Require at least 4400 units of Stockton's new housing growth to be located in Greater Downtown Stockton (defined as land generally bordered by Harding Way, Charter Way (MLK), Pershing Avenue, and Wilson Way), with the goal of approving 3,000 of these units by 2020.
- b. Require at least an additional 14,000 of Stockton's new housing units to be located within the City limits as they exist on the Effective Date ("existing City limits").
- c. Provide incentives to promote infill development in Greater Downtown Stockton, including but not limited to the following for proposed infill developments: reduced impact fees, including any fees referenced in paragraph 7 below; lower permit fees; less restrictive height limits; less restrictive setback requirements; less restrictive parking requirements; subsidies; and a streamlined permitting process.
- d. Provide incentives for infill development within the existing City limits but outside Greater Downtown Stockton and excluding projects of significance. These incentives may be less aggressive than those referenced in paragraph 6.c., above.

7. Within 12 months of the Effective Date, the City staff shall submit for City Council adoption amendments to the General Plan to ensure that development at the City's outskirts, particularly residential, village or mixed use development, does not grow in a manner that is out of balance with development of infill. These proposed amendments shall include, but not be limited to, measures limiting the granting of entitlements for development projects outside the existing City limits and which are (1) subject to an SP or MDP, or (2) projects of significance, until certain criteria are met. These criteria shall include, at a minimum:

- a. Minimum levels of transportation efficiency, transit availability (including BRT) and Level of Service, as defined by the San Joaquin Council of Government regulations, City service capacity, water availability, and other urban services performance measures;
- b. Firm, effective milestones that will assure that specified levels of infill development, jobs-housing balance goals, and GHG and VMT reduction goals, once established, are met before new entitlements can be granted;
- c. Impact fees on new development, or alternative financing mechanisms identified in a project's Fiscal Impact Analysis and/or Public Facilities Financing Plan, that will ensure that the levels and milestones referenced in paragraphs 7.a. and 7.b., above, are met. Any such fees:
 - (1) shall be structured, in accordance with controlling law, to ensure that all development outside the infill areas within existing City limits is revenue-neutral to the City (which may necessitate higher fees for development outside this area, depending upon the costs of extending infrastructure);
 - (2) may be in addition to mitigation measures required under CEQA;
 - (3) shall be based upon a Fiscal Impact Analysis and a Public Facilities Financing Plan.
- d. The City shall explore the feasibility of enhancing the financial viability of infill development in Greater Downtown Stockton, through the use of such mechanisms as an infill mitigation bank.

8. The City shall regularly monitor the above strategies and measures to ensure that they are effectively reducing GHG emissions. In addition to the City staff reporting on VMT annually, as provided in paragraph 3.c., the City staff or the advisory committee shall report annually to the City Council on the City's progress in implementing the

strategies and measures of this Agreement. If it appears that the strategies and measures will not result in the City meeting its GHG reduction targets, the City shall, in consultation with the Attorney General and Sierra Club, make appropriate modifications and, if necessary, adopt additional measures to meet its targets.

Early Climate Protection Actions

9. To more fully carry out those provisions of the General Plan, including the policy commitments embodied in those General Plan Policies, such as General Plan Policy HS-4.20, intended to reduce greenhouse gas emissions through reducing commuting distances, supporting transit, increasing the use of alternative vehicle fuels, increasing efficient use of energy, and minimizing air pollution, and to avoid compromising the effectiveness of the measures in Paragraphs 4 through 8, above, until such time as the City formally adopts the Climate Action Plan, before granting approvals for development projects (1) subject to an SP or MDP, or (2) considered projects of significance, and any corresponding development agreements, the City shall take the steps set forth in subsections (a) through (d) below:

(a) City staff shall:

- (1) formulate proposed measures necessary for the project to meet any applicable GHG reduction targets;
- (2) assess the project's VMT and formulate proposed measures that would reduce the project's VMT;
- (3) assess the transit, especially BRT, needs of the project and identify the project's proposed fair share of the cost of meeting such needs;
- (4) assess whether project densities support transit, and, if not, identify proposed increases in project density that would support transit service, including BRT service;
- (5) assess the project's estimated energy consumption, and identify proposed measures to ensure that the project conserves energy and uses energy efficiently;
- (6) formulate proposed measures to ensure that the project is consistent with a balance of growth between land within Greater Downtown Stockton and existing City limits, and land outside the existing City limits;

- (7) formulate proposed measures to ensure that City services and infrastructure are in place or will be in place prior to the issuance of new entitlements for the project or will be available at the time of development; and
- (8) formulate proposed measures to ensure that the project is configured to allow the entire development to be internally accessible by all modes of transportation.
- (b) The City Council shall review and consider the studies and recommendations of City staff required by paragraph 9(a) and conduct at least one public hearing thereon prior to approval of the proposed project (though this hearing may be folded into the hearing on the merits of the project itself).
- (c) The City Council shall consider the feasibility of imposing conditions of approval, including mitigation measures pursuant to CEQA, based on the studies and recommendations of City staff prepared pursuant to paragraph 9(a) for each covered development project.
- (d) The City Council shall consider including in any development approvals, or development agreements, that the City grants or enters into during the time the City is developing the Climate Action Plan, a requirement that all such approvals and development agreements shall be subject to ordinances and enactments adopted after the effective date of any approvals of such projects or corresponding development agreements, where such ordinances and enactments are part of the Climate Action Plan.
- (e) The City shall complete the process described in paragraphs (a) through (d) (hereinafter, “Climate Impact Study Process”) prior to the first discretionary approval for a development project. Notwithstanding the foregoing, however, for projects for which a draft environmental impact report has circulated as of the Effective Date, the applicant may request that the City either (i) conduct the Climate Impact Study Process or (ii) complete its consideration of the Climate Action Plan prior to the adoption of the final discretionary approval leading to the project’s first phase of construction. In such cases, the applicant making the request shall agree that nothing in the discretionary approvals issued prior to the final discretionary approval (i) precludes the City from imposing on the project conditions of approvals or other measures that may result from the Climate Impact Study Process, or (ii) insulates the project from a decision, if any, by the City to apply any ordinances and/ or enactments that may comprise the Climate Action Plan

ultimately adopted by the City.

Attorney General Commitments

10. The Attorney General enters into this Agreement in his independent capacity and not on behalf of any other state agency, commission, or board. In return for the above commitments made by the City, the Attorney General agrees:

- a. To refrain from initiating, joining, or filing any brief in any legal challenge to the General Plan adopted on December 11, 2007;
- b. To consult with the City and attempt in good faith to reach an agreement as to any future development project whose CEQA compliance the Attorney General considers inadequate. In making this commitment, the Attorney General does not surrender his right and duties under the California Constitution and the Government Code to enforce CEQA as to any proposed development project, nor his duty to represent any state agency as to any project;
- c. To make a good faith effort to assist the City in obtaining funding for the development of the Climate Action Plan.

Sierra Club Commitments

11. The Sierra Club agrees to dismiss the Sierra Club Action with prejudice within ten (10) days of the Effective Date. Notwithstanding the foregoing agreement to dismiss the Sierra Club Action, the City and Sierra Club agree that, in the event the City should use the EIR for the 2035 General Plan in connection with any other project approval, the Sierra Club has not waived its right (a) to comment upon the adequacy of that EIR, or (b) to file any action challenging the City's approval of any other project based on its use and/or certification of the EIR.

General Terms and Conditions

12. This Agreement represents the entire agreement of the Parties, and supercedes any prior written or oral representations or agreements of the Parties relating to the subject matter of this Agreement.

13. No modification of this Agreement will be effective unless it is set forth in writing and signed by an authorized representative of each Party.

14. Each Party warrants that it has the authority to execute this Agreement. Each Party warrants that it has given all necessary notices and has obtained all necessary consents to permit it to enter into and execute this Agreement.

15. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

16. This Agreement may be executed in counterparts, each of which shall be deemed an original. This Agreement will be binding upon the receipt of original, facsimile, or electronically communicated signatures.

17. This Agreement has been jointly drafted, and the general rule that it be construed against the drafting party is not applicable.

18. If a court should find any term, covenant, or condition of this Agreement to be invalid or unenforceable, the remainder of the Agreement shall remain in full force and effect.

19. The City agrees to indemnify and defend the Sierra Club, its officers and agents (collectively, "Club") from any claim, action or proceeding ("Proceeding") brought against the Club, whether as defendant/respondent, real party in interest, or in any other capacity, to challenge or set aside this Agreement. This indemnification shall include (a) any damages, fees, or costs awarded against the Club, and (b) any costs of suit, attorneys' fees or expenses incurred in connection with the Proceeding, whether incurred by the Club, the City or the parties bringing such Proceeding. If the Proceeding is brought against both the Club and the City, the Club agrees that it may be defended by counsel for the City, provided that the City selects counsel that is acceptable to the Club; the Club may not unreasonably withhold its approval of such mutual defense counsel.

20. The City shall pay Sierra Club's attorney's fees and costs in the amount of \$157,000 to the law firm of Shute, Mihaly & Weinberger LLP as follows: \$50,000 within 15 days of dismissal of the Sierra Club Action, and (b) the balance on or before January 30, 2009.

21. Any notice given under this Agreement shall be in writing and shall be delivered as follows with notice deemed given as indicated: (a) by personal delivery when delivered personally; (b) by overnight courier upon written verification of receipt; or (c) by certified or registered mail, return receipt requested, upon verification of receipt. Notice shall be sent as set forth below, or as either party may specify in writing:

City of Stockton:

Attorney General's Office

Richard E. Nosky, City Attorney
425 N. El Dorado Street, 2nd Floor
Stockton, CA 95202

Lisa Trankley
Susan Durbin
Deputy Attorneys General
1300 I Street, P.O. Box 944255
Sacramento, CA 94255-2550

Sierra Club:
Aaron Isherwood
Environmental Law Program
85 Second Street, 2nd Floor
San Francisco, CA 94105

Rachel Hooper
Amy Bricker
Shute, Mihaly & Weinberger
396 Hayes Street
San Francisco, CA 94102

22. Nothing in this Agreement shall be construed as requiring the City to relinquish or delegate its land use authority or police power.

(SIGNATURES ON FOLLOWING PAGE)

In witness whereof, this Agreement is executed by the following:

PEOPLE OF THE STATE OF CALIFORNIA
BY AND THROUGH ATTORNEY GENERAL
EDMUND G. BROWN JR.

Lisa Frankley

DATED: 10/14/08

ATTEST:

[Signature]
KATHERINE GONG MEISSNER
City Clerk of the City of Stockton



CITY OF STOCKTON,
a municipal corporation

[Signature]
J. GORDON PALMER, JR.
City Manager

APPROVED AS TO FORM:

[Signature]
RICHARD E. NOSKY, JR.
City Attorney

DATED 9/25/08

DATED 9-9-08

THE SIERRA CLUB

BARBARA WILLIAMS, CHAIR
MOTHER LODGE CHAPTER

DATED _____

In witness whereof, this Agreement is executed by the following:

PEOPLE OF THE STATE OF CALIFORNIA
BY AND THROUGH ATTORNEY GENERAL
EDMUND G. BROWN JR.

DATED: _____

ATTEST:

CITY OF STOCKTON,
a municipal corporation

KATHERINE GONG MEISSNER
City Clerk of the City of Stockton

J. GORDON PALMER, JR.
City Manager

APPROVED AS TO FORM:

DATED _____

RICHARD E. NOSKY, JR.
City Attorney

DATED _____

THE SIERRA CLUB


BARBARA WILLIAMS, CHAIR
MOTHER LODE CHAPTER

DATED 10/11/08

EXHIBIT A

Policy Re: VMT Monitoring Program

The City's policy is to monitor key City-maintained roadways to estimate Vehicle Miles Traveled (VMT) by single-occupant automobile per capita on an annual basis, to be submitted as an annual report to the City Council. The estimate of citywide VMT should be developed in cooperation with the San Joaquin Council of Governments ("SJCOG"), by augmenting local City data with VMT estimates from SJCOG and Caltrans for the regional Congestion Management Plan network. The estimated change in annual VMT should be used to measure the effectiveness of jobs/housing balance, greenhouse gas emission reduction, and transit plans and programs.

Implementation Program

In order to develop an annual estimate of citywide VMT, the City should augment local City data with VMT estimates from SJCOG and Caltrans for regional facilities, or adopt other methodologies to estimate citywide VMT that are approved in concept by the two agencies. For purposes of calculating annual changes in VMT, the annual estimate of VMT should subtract out the estimates of regional truck and other through traffic on the major freeways (I-5, SR 4, SR 99).

Policy Re: Reduce Growth in VMT

The City's policy is to achieve the following fundamental goals to regulate vehicle emissions and reduce greenhouse gas emissions, improve jobs/housing balance, and increase transit usage over the duration of this General Plan: Reduce the projected increase in VMT by single-occupant automobile per capita to an annual rate over the planning period that is equal to or less than the population increase (this goal is also required for the City to receive funding through the Measure K/Congestion Management Plan program).

Implementation Program

In order to keep annual increases in VMT to a rate equal to or less than population increases, the following trip reduction programs should be considered by the City: increased transit service (Bus Rapid Transit) funded through new development fees; planning all future housing development to be in the closest possible proximity to existing and planned employment centers; provision of affordable housing; creation of higher density, mixed use and walkable communities and development of bicycle and pedestrian trails; and other proven programs.

Implementation Program

If the City goal of reducing the projected increase in VMT to an amount equal to or less than the population increase, and increase transit usage, is not met for two or more years during each five-year cycle of VMT monitoring, the City should consider adoption of the following programs, among others:

Adopt more vigorous economic development programs with funding for staff; and
Slow the rate of approvals of building permits for housing developments.

EXHIBIT B

Policy Re: Bus Rapid Transit

The City's policy is to vigorously support efforts to develop Bus Rapid Transit (BRT) within and beyond Stockton as a major priority of its General Plan, in order to increase overall transit usage over time. Based on an updated transit study, the City should plan for and provide BRT service running along key north-south routes as a first priority: Pacific Avenue; El Dorado Street; West Lane/Airport Way; Pershing Avenue. BRT service along key east-west corridors should also be provided. Transit use goals should be approved and monitored by the City over the planning period.

Implementation Program

In order to fund the initial capital and operating costs for BRT along major north-south arterials, the City should consider adoption of a comprehensive new development BRT fee program that requires new growth to significantly fund BRT, following a study consistent with the requirements of State law. The new development BRT fee program should ensure that "greenfield" projects approved at the fringe of the City pay a fee that represents the full cost of providing BRT service to the new housing; infill development may be granted a reduced BRT fee based on the reduced distance of service provided to the inner city areas.

Implementation Program

In order to augment the new development funding of the initial capital and operating costs for BRT, the City should strongly advocate for Measure K funding and should seriously consider placing an initiative on the ballot to receive voter approval for additional funding from existing residents and businesses.

Implementation Program

The City should establish transit use goals that set specific targets (e.g., transit mode split percentage of total trips and bus headways) that represent an increase in public transportation ridership and level of service over current levels by 2012 and then another increase by 2018.

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EXECUTION VERSION 9-10-08



CITY OF STOCKTON

OFFICE OF THE CITY MANAGER

City Hall • 425 N. El Dorado Street • Stockton, CA 95202-1997 • 209/937-8212 • Fax 209/937-7149
www.stocktongov.com

October 7, 2008

Alliance for Responsible Planning
6507 Pacific Avenue
Box 339
Stockton, CA 95207

SETTLEMENT AGREEMENT WITH ATTORNEY GENERAL AND SIERRA CLUB

As you are aware, on September 9, 2008, the City of Stockton approved a Memorandum of Agreement with the Sierra Club and the California Attorney General's Office resolving litigation over the City's 2035 General Plan. The Alliance for Responsible Planning and other interested parties have raised questions about the parties' interpretation of the Agreement and the public process that the City plans to follow in carrying out the Agreement. To help answer these questions, below we clarify our interpretation of the Agreement and also elaborate on the public process that the City will follow in implementing the provisions of the Agreement. We understand that the other parties to the Agreement concur in these views. Note that many of the statements below reiterate points that were made in the City's Resolution adopted in connection with its approval of the Agreement and in statements made by the parties during the August 26, 2008, and September 9, 2008, City Council hearings about the Agreement:

1. The parties understand and acknowledge the importance of public involvement in the process of developing the General Plan, and encourage the continued significant involvement of the public in the development of greenhouse gas reduction policies. The City intends to provide for public involvement in the development of the programs, policies, General Plan amendments and ordinances proposed by the Agreement. The City also will provide reasonable notification to the public of all Advisory Committee, Planning Commission and City Council meetings involving consideration of the issues provided for by the Agreement. It is the City's expectation to expand the composition of the Climate Action Advisory Committee to include a total of two representatives from each of the following interests: (1) environmental, (2) non-profit community organization, (3) labor, (4) business, and (5)



developer. The City will fully comply with CEQA in connection with the development of the programs, policies, General Plan amendments and ordinances proposed by the Agreement.

2. The parties understand and acknowledge that the public review process and compliance with CEQA may require additional time beyond designated time periods to ensure the full involvement of the public in the consideration of the Climate Action Plan, green building program and transit study and to ensure full compliance with CEQA.
3. The parties understand and acknowledge that the adoption of the programs, policies, General Plan amendments and ordinances proposed by the Agreement are discretionary legislative acts and the City is not required by the terms of the Agreement to adopt any particular program, policy, General Plan amendment or ordinance. In addition, nothing in the Agreement shall limit or restrict the right of the City to modify, alter, or rescind any particular program, policy, General Plan amendment or ordinance following the adoption of such program, policy, General Plan amendment or ordinance. Although the Agreement requires City staff to present to the City Council certain programs, policies, General Plan Amendments and ordinances for its consideration, nothing in the Agreement limits or restricts City staff from providing to the City Council additional, alternative recommendations for such programs, policies, General Plan amendments and ordinances based on staff professional judgment, public input and CEQA review.
4. The parties understand and acknowledge that if there is an instance in which the terms of the written Agreement are unclear, the Resolution adopted by the City Council on September 9, 2008, and the statements made by the Attorney General's office, the Sierra Club and our City Attorney and the City's outside counsel at the August 26 and September 9, 2008, City Council hearings provide a legislative history pursuant to which the Agreement should be interpreted.
5. The parties understand and acknowledge that:
 - (i) upon consideration of a Climate Action Plan (CAP) by the Council, the City's obligations under Agreement paragraphs 3 through 7 will be discharged,
 - (ii) upon adoption of a CAP, the City's obligations under Agreement paragraph 9 will be discharged, and
 - (iii) upon inclusion of a program in the CAP to regularly monitor and, if appropriate, modify the City's strategies and measures to meet the Greenhouse Gas reduction targets that may be adopted in the

Alliance for Responsible Planning
October 7, 2008
Page 3 of 3

CAP, the City's obligations under paragraph 8 will be discharged. Nothing in this paragraph 5 is intended to contradict our clarification in paragraph 3, above, that the City retains full legislative discretion with respect to any policies, programs and ordinance it may adopt as part of a CAP.



J. GORDON PALMER, JR.
CITY MANAGER

JGP:REN:cn

cc: Edward J. Chavez
Richard E. Nosky, Jr.
George Mihalsten (Via e-mail)
Cliff Rechtschaffen (Via e-mail)
Rachel Hooper (Via e-mail)

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EDMUND G. BROWN JR.
Attorney General

State of California
DEPARTMENT OF JUSTICE



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P.O. BOX 70550
OAKLAND, CA 94612-0550
Public: 510-622-2260
Telephone: 510-622-2260
Facsimile: 510-622-2270
E-Mail: Cliff.Rechtschaffen@doj.ca.gov

October 7, 2008

Alliance for Responsible Planning
6507 Pacific Avenue
Box 339
Stockton, CA 95207

RE: Stockton General Plan Settlement
Clarification Letters

Dear Alliance Members:

The Attorney General's Office has read the letter from Stockton City Manager Gordon Palmer to the Alliance for Responsible Planning (copy attached). We concur in the City's interpretation and understanding of the Memorandum of Agreement as set forth in the letter.

If you have questions, please contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads "Cliff Rechtschaffen".

CLIFF RECHTSCHAFFEN
Special Assistant Attorney General

For EDMUND G. BROWN JR.
Attorney General

SHUTE, MIHALY & WEINBERGER LLP
ATTORNEYS AT LAW

E. CLEMENT SHUTE, JR.*
MARK I. WEINBERGER (1948-2005)
FRAN M. LAYTON
RACHEL B. HOOPER
ELLEN J. GARBER
TAMARA S. GALANTER
ANDREW W. SCHWARTZ
ELLISON FOLK
RICHARD S. TAYLOR
WILLIAM J. WHITE
ROBERT S. PERLMUTTER
OSA L. WOLFF
MATTHEW D. ZINN
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AMANDA R. GARCIA
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ISAAC N. BOWERS
HEATHER M. MINNER
ERIN B. CHALMERS

LAUREL L. IMPETT, AICP
CARMEN J. BORG, AICP
URBAN PLANNERS

October 7, 2008

Via U.S. Mail

Alliance for Responsible Planning
6507 Pacific Avenue
Box 339
Stockton, CA 95207

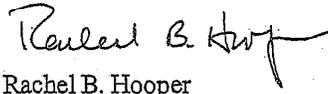
Re: Stockton General Plan Settlement
Clarification Letters

Dear Alliance:

On behalf of the Sierra Club, we have read the letter from Stockton City Manager Gordon Palmer to the Alliance for Responsible Planning (copy attached). The Sierra Club concurs in the City's interpretation and understanding of the Memorandum of Agreement as set forth in the letter.

SHUTE, MIHALY, & WEINBERGER LLP

Yours very truly,


Rachel B. Hooper

Enclosure

\\smw\wo11_data\SIERRA\GPLIT\Sierra Club letter of concurrence.doc

Alliance for Responsible Planning

5507 Pacific Avenue
Box 338
Stockton, CA 95207

October 7, 2008

Honorable Mayor Ed Chavez and City Councilmembers
425 N. El Dorado St, 2nd Floor
Stockton, CA 95202

Honorable Mayor and Councilmembers:

We are pleased to receive a copy of a letter from Gordon Palmer, City Manager, outlining a series of clarifications regarding the Memorandum of Agreement entered into by the City with the Attorney General and the Sierra Club. The letter from Mr. Palmer sets forth important clarifications to the Agreement which have been concurred in by the Attorney General and the Sierra Club.

These clarifications provide clear assurances to the Alliance and the public as to a number of critical issues that have been of concern to the Alliance. In particular, the letter makes very clear the importance of significant public involvement in the consideration of a Climate Action Plan. We strongly support the possible expansion of the number of members of the proposed Advisory Committee and look forward to participating in that process.

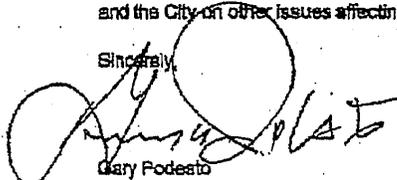
In addition, the Alliance agrees that alternative recommendations can be presented to the City Council based on public input and the California Environmental Quality Act. This helps to ensure the credibility of the public process. Lastly, the letter underscores the clear understanding of the parties to the Agreement that the adoption of a Climate Action Plan is in the legislative discretion of the City.

In light of the discussions undertaken in good faith among the parties and the Alliance, the statements made in Mr. Palmer's letter, and the concurrence of the Attorney General and the Sierra Club to the letter from the City Manager, we have decided to withdraw our effort to seek a referendum of the Agreement pursuant to the authorization contained in Section 9604 of the Elections Code. These statements by the City and the other parties address the core issues we have heard from the community. In accordance with section 9604, we will provide written notice to the City Clerk of the withdrawal of the referendum. In addition, we will not be pursuing a legal challenge to the adoption of the Agreement by the City nor will we promote or fund any individuals or entities challenging the adoption of the Agreement or promoting a referendum of the Agreement. We, of course, reserve our rights to challenge the implementation of the Agreement.

We are proud of the 25,000 Stocktonians who participated in this process. We thank the City Manager, the City Attorney, the Attorney General and the Sierra Club for providing these clarifications. It is sincerely appreciated.

We look forward to working with the City and the community in undertaking development of a Climate Action Plan. In addition, the Alliance looks forward to continuing to work with the community and the City on other issues affecting the City's future.

Sincerely,



Gary Podesta



October 7, 2008

Honorable Mayor Ed Chavez and Councilmembers
425 N. El Dorado St., 2nd Floor
Stockton, CA 95202

Honorable Mayor and Councilmembers:

We have had a chance to review the letter from the City Manager dated October 7, 2008 and letters from the Attorney General and the Sierra Club. These letters provide a number of critical clarifications with respect to the Memorandum of Agreement approved by the City on September 9, 2008.

In particular:

- o All parties have recognized the need for significant community involvement in the consideration of a Climate Action Plan. The A. G. Spanos Companies strongly supports the City's stated expectation to expand the number of members of the proposed Advisory Committee, and we look forward to participating in that process.
- o Second, all parties have it clear that alternative recommendations can be presented to the City Council based on public input and the California Environmental Quality Act. This helps to ensure the credibility of the public process.
- o Finally, all parties to the Agreement acknowledge that the adoption of a Climate Action Plan is in the legislative discretion of the City.

In light of these statements by Mr. Palmer and the concurrence of the other parties regarding a significant public process and assurances regarding the independent discretion of the City in developing and considering a Climate Action Plan, we will not be pursuing a legal challenge to the adoption of the Agreement by the City and will not fund or support any efforts by any other individuals or entities to file a legal challenge to the adoption of the Agreement or to seek a referendum with regard to the adoption of the Agreement. We, of course, reserve our rights to challenge the implementation of the Agreement.

We look forward to working with the community and the City in developing a Climate Action Plan. We are prepared to work with the City and the Alliance to develop a comprehensive public outreach program to ensure the community's significant involvement in the process.

Sincerely,

David Nelson
A.G. Spanos Companies

10100 Trinity Parkway, 5th Floor Stockton, California 95219 Telephone: 209.478.7954 Fax: 209.478.3309

Letter No. D91

Letter from Center for Biological Diversity, January 24, 2011

Response 1

This comment is an introduction to comments that follow and does not raise an environmental issue within the meaning of CEQA. No further response is required.

Response 2

The comment states that the proposed Area Plan's policies "and land use determinations have profound implications for global warming." The comment also states that local agencies are "essential partners" for the purpose of implementing California's Global Warming Solutions Act of 2006 (AB 32), and notes the benefits of effective local planning, including streamlining of future environmental review.

The comment addresses general subject areas, which received extensive analysis in Section 3.4, Global Climate Change, of the Revised Draft EIR. The comment does not raise any specific issue regarding that analysis and, therefore, no more specific response can be provided or is required. That said, the County disagrees with the comment's subjective characterization of the proposed Area Plan's implications for global warming as "profound." As reflected in the discussion in Section 3.4 of the Revised Draft EIR, the regulatory framework and science continue to evolve and the extent of any one particular project's impacts on global climate change is uncertain. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 3

The comment expresses the opinion that the proposed Area Plan does not appear to take seriously the County's obligation to reduce greenhouse gas emissions because it is only composed of aspirational measures and contains a land use pattern that perpetuates the region's sprawl. The statement is incorrect.

To the contrary, the County takes seriously its role as a "partner" in the state's efforts to reduce greenhouse gas emissions and to effectively combat the effects of global climate change. That being said, the County also seeks to minimize redundant regulation due to the global nature of the subject environmental issue. (Global climate change is a global issue such that the precise location of the emission of greenhouse gas emissions is not the driving factor. Rather, it is the total quantity of greenhouse gas emissions that drives global climate change.) Therefore, the County seeks to harmonize its efforts with applicable international, national, state, and regional efforts.

The County's efforts to reduce greenhouse gas emissions are not limited to its General Plan and components thereof, such as Area Plans. As just one example of the County's good faith efforts to combat global climate change, please see the County's Green Building Program Web Site, which is available on the Internet: <http://planning.lacounty.gov/green>. The Green Building Program consists of three

ordinances that were adopted by the County's Board of Supervisors on November 18, 2008: (1) Green Building (Ordinance No. 2008-0065); (2) Low-Impact Development (Ordinance No. 2008-0063); and, (3) Drought Tolerant Landscaping (Ordinance No. 2008-0064). These ordinances, which have been incorporated into Titles 12, 21 and 22 of the Los Angeles County Code, became applicable in unincorporated portions of Los Angeles County on January 1, 2009, and require a variety of green design practices for new residential and non-residential projects. (See also Revised Draft EIR, pp. 3.4-32 to -33 [summarizing the primary attributes of the Green Building Program].) Compliance with the County's Green Building Program is required by various policies in the proposed Area Plan, including:

Policy CO 8.1.3 Implement the ordinances developed through the County's Green Building Program.

Policy CO 8.3.1 Evaluate development proposals for consistency with the ordinances developed through the County's Green Building Program.

Policy CO 8.3.2 Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County's Green Building Program.

The 139-page analysis presented in Section 3.4 of the Revised Draft EIR, and the proposed Area Plan's inclusion of numerous goals, objectives and policies designed to achieve green design and smart growth, rather than promoting sprawl, are also evidence of the seriousness with which the County treats its partnership role. As set forth in additional responses below, the Area Plan also includes various other measures to reduce greenhouse gas emissions.

Response 4

The comment states that the Revised Draft EIR contains other defects that make it difficult to understand environmental impacts that could result from the proposed Area Plan, including a confusing and uninformative Project Description and a comparison of buildout of the currently adopted Area Plan to buildout of the proposed Area Plan rather than a comparison of current "on the ground" environmental conditions to buildout of the proposed Area Plan. The commenter fails to identify any specific issues regarding why environmental impacts that could result from the proposed Area Plan are difficult to understand and why they find the Project Description uninformative. Therefore, no further response can be provided.

Moreover, the commenter incorrectly asserts that the Revised Draft EIR does not provide a comparison of current "on the ground" environmental conditions to buildout of the proposed Area Plan (a "Ground to

Plan” analysis). While Section 3.4 of the Revised Draft EIR does compare buildout under the currently adopted and proposed Area Plans (see page 3.4-135) for informational purposes, and which is responsive to inquiries made during the scoping process regarding why there is a necessity to update the currently adopted Area Plan, Section 3.4 of the Revised Draft EIR also explicitly compares the existing greenhouse gas emission levels (see Table 3.4-5, Estimated Existing Annual GHG Emissions) with those anticipated to result from buildout of the proposed Area Plan (see Table 3.4-6, GHG Emissions from the Proposed Area Plan and General Plan). As disclosed in Section 3.4 of the Revised Draft, the existing, “on the ground” environmental conditions emit approximately 3,221,900 metric tons of carbon dioxide equivalents (CO_{2e}) per year (Revised Draft EIR, p. 3.4-45). At buildout of the proposed Area Plan, approximately 5,070,300 metric tons of CO_{2e} per year would result, equating to an incremental increase of 1,848,400 metric tons of CO_{2e} per year. (Revised Draft EIR, p. 3.4-45)

Response 5

The comment states that the Revised Draft EIR’s Alternatives analysis is inadequate. The comment addresses general subject areas concerning Alternatives, which received extensive analysis in Section 6.0, Alternatives, of the Revised Draft EIR. The comment does not raise any specific issue regarding that analysis and, therefore, no more specific response can be provided or is required. That being said, please note that Section 6.0 of the Revised Draft EIR evaluated three alternatives to the proposed Area Plan in light of the anticipated significant and unavoidable impacts to air quality, global climate change, water supply, biological resources, utilities and infrastructure (solid waste), and noise: Alternative 1 - No Project/Existing SCV Area Plan; Alternative 2 - Preservation Corridor Alternative; and Alternative 3 - Transit Corridor/Increased Employment Opportunity Alternative (Revised Draft EIR, p. 6.0-2). Please also see **Responses 55** and **56** for additional information regarding the adequacy of the alternatives analysis.

Response 6

The comment states that the range of Alternatives is improperly limited but the environmentally superior alternative identified in the Revised Draft EIR was illogically and cursorily rejected. The comment addresses general subject areas concerning Alternatives, which received extensive analysis in Section 6.0, Alternatives, of the Draft EIR. Moreover, the environmentally superior alternative was rejected because it did not meet as many of the project objectives as the proposed Area Plan (See page 6.0-31 and 6.0-44 of the Revised Draft EIR). The commenter is also directed to **Response 57** for further information. The comment does not raise any specific issue regarding that analysis and, therefore, no more specific response can be provided or is required. However, the comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 7

The commenter urges the County to remedy the Revised Draft EIR's defects and use this opportunity to develop a sustainable and forward-thinking vision for the Santa Clarita Valley.

The comment suggests a qualitative judgment of the Area Plan's content, intent, and purpose and identifies no specific environmental issue or specific defect in the Revised Draft EIR and does not appear to relate to a physical effect on the environment by the Proposed Area Plan. As such, the comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. Moreover, as explained in the following responses, the proposed Area Plan does provide for sustainable living in the unincorporated areas of the Santa Clarita Valley. Further, the Revised Draft EIR is adequate under CEQA, as the analysis is well reasoned, thorough, and represents a good faith effort by the County to deal with an environmental issue that is subject to continuously evolving scientific, regulatory, and legal standards, policy, and debate.

Response 8

The commenter criticizes the project description as incomplete and uninformative and specifically requests information regarding the population projections for the Santa Clarita Valley, and information regarding the correlation between such projections and the amount of development contemplated by the proposed Area Plan. The comment also requests information on the location, extent, and type of development that currently exists in the unincorporated Santa Clarita Valley in relation to what is contemplated by the proposed Area Plan. The comment states that it is difficult to understand where, how much, and what type of development currently exists in comparison to what would be allowed under the proposed Area Plan.

Population projections for the proposed Area Plan are provided in Table 2.0-1, Summary of Population, Housing, and Employment Projections for the OVOV Planning Area at Buildout. As provided therein, at buildout, the OVOV Planning Area (which consists of the City's Planning Area, including its existing incorporated boundaries and its Sphere of Influence areas, and the County's Planning Area, which includes all unincorporated areas within the Santa Clarita Valley, both of which were considered in the joint "One Valley One Vision" OVOV planning effort) will contain approximately 460,000 to 485,000 people; of this amount, approximately 237,387 would be located within the unincorporated Santa Clarita Valley. (Revised Draft EIR, p. 2.0-28.) The analytical assumptions and methodology used to prepare this population estimate are discussed at length on pages 2.0-24 through 2.0-25. As explained, "[t]he projections ... represent staff's best efforts to achieve a realistic vision of actual buildout potential for the planning area. In preparing the OVOV land use projections, staff acknowledged that portions of the planning area are already largely developed, and that the Area Plan is not based on a 'clean slate' of

vacant, undeveloped land. Existing uses and development patterns must be recognized in planning for new uses.” (Revised Draft EIR, p. 2.0-25.)

Additional information regarding population projections for the Santa Clarita Valley is also provided in Section 3.19, Population and Housing, of the Revised Draft EIR:

“According to [the Southern California Association of Government’s (SCAG)] Growth Forecast, the population of the entire unincorporated subregion is expected to grow from 132,797 residents in the year 2005 to 434,773 residents in the year 2035.” (Revised Draft EIR, p. 3.19-3.)

“In 2008, the population of the County’s Planning Area was approximately 75,000 residents. Buildout of the proposed Area Plan Land Use Map would increase the County Planning Area’s population by 162,387 residents to a total population of approximately 237,387 residents.” (Revised Draft EIR, p. 3.19-5.)

“SCAG projects that the population of the unincorporated North Los Angeles County subregion, which includes unincorporated portions of the Santa Clarita Valley as well as unincorporated areas of the Antelope Valley, will increase from 132,797 residents in year 2005 to 434,773 residents in year 2035, for a total increase of 301,975 residents (no population projections from SCAG are presently available for this region after year 2035). Accordingly, SCAG projects substantial population growth (over 227 percent) throughout unincorporated North Los Angeles County during the current planning period. Since buildout of the proposed Area Plan would increase the population of the unincorporated Santa Clarita Valley by 162,387 residents by year 2035, and given that the population of the entire unincorporated North Los Angeles subregion is projected to increase by 301,976 residents by 2035, implementation of the proposed Area Plan would account for approximately 54 percent of this growth.” (Revised Draft EIR, p. 3.19-6.)

As indicated by the above excerpts, the level of population growth contemplated by the proposed Area Plan is generally consistent with SCAG’s regional projections and required to accommodate long-term growth trends anticipated in the Santa Clarita Valley.

With respect to the comment’s request for information regarding existing development levels, Section 3.19 of the Revised Draft EIR disclosed that:

“As of 2008, there were approximately 80,000 dwelling units within the Santa Clarita Valley, of which 23,000 were in the unincorporated areas and 57,000 were within the City of Santa Clarita. Another 39,500 dwelling units had received land use approval, including 33,500 units in unincorporated County areas and 6,000 units within the City of Santa Clarita; several thousand more dwelling units were the subject of pending land use applications.” (Revised Draft EIR, p. 3.19-2.)

Additional information regarding the existing communities located within the Santa Clarita Valley, as well as approved Specific Plans, is provided in Section 2.0, Project Description, pp. 2.0-13 through 2.0-24, of the Revised Draft EIR.

The Revised Draft EIR also disclosed that the population projections (460,000 to 485,000) associated with full buildout of the proposed Area Plan translate into approximately 150,000 to 160,000 households (Draft EIR, p. 2.0-24).

As to forms of non-residential development, Table 2.0-2, Acres of Land Use Designations, in the Revised Draft EIR identified the acreage total for each land use designation identified in the proposed Area Plan, allowing for an approximate assessment, by acreage, of the type and amount of development proposed for each land use designation in the proposed Area Plan. Information regarding the location of such development is provided in Figure 2.0-4, Proposed Land Use Policy Map (Revised Draft EIR, pp. 2.0-25 to 2.0-27 [summarizing analytical assumptions and methodology used by County staff in developing commercial and industrial development projections]).

More generally, Section 2.0 Project Description, pp. 2.0-2 and 2.0-3, of the Revised Draft EIR included the following information:

“This project description provides the following:

- A discussion of location and regional setting of the One Valley One Vision (OVOV) Planning Area
- A discussion of environmental review and consultation requirements and how the Area Plan EIR is to be used by the County
- Purpose of the Area Plan EIR
- Approvals and Actions to Implement the Area Plan
- Purpose of the Area Plan and the 36 Guiding Principles, which guide the development of the Santa Clarita Valley
- An overview of the existing communities and approved Specific Plans
- A summary of the analysis assumptions and methodology used in preparing the Area Plan
- A discussion of Land Use Element and Map of the Area Plan
- Policies of each of the above mentioned elements”

The Project Description Section of the Revised Draft EIR further discusses each of the Elements contained within the proposed Area Plan (Land Use, Circulation, Conservation and Open Space, Safety, and Noise) and the goals and the policies within each Element. The section also discusses the relationship of the proposed Area Plan to the Housing Element in the Countywide General Plan, which was adopted by the Board of Supervisors on August 5, 2008. All of the information contained within the Project Description comprises the various portions of a complete Project Description. The Project Description contained within the Revised Draft EIR is thorough, complete and is consistent with *California Environmental Quality Act (CEQA) Guidelines* Section 15124 Project Description.

Response 9

The commenter states that the Revised Draft EIR fails to analyze project impacts as compared to existing environmental conditions. The commenter submits vehicle miles traveled as “but one example of the Revised Draft EIR’s improper application of CEQA baseline,” apparently referring to Table 3.2-12 in the Revised Draft EIR. This table does show a “Plan to Plan” comparison of Trip Length and Vehicle Miles Travelled. However, the analysis in this table was included for general informational purposes and review of vehicle miles travelled and is not a standard necessary for analysis under the Thresholds for Significance for Transportation and Circulation, as outlined on page 3.2-25 of the Revised Draft EIR. Moreover, Table 3.2-6, Trip Generation – Existing vs. OVOV Buildout, in the Revised Draft EIR compares the number of trips generated by existing (2004)¹¹ land uses to the number of trips generated by future land uses in the Santa Clarita Valley at buildout of the County’s proposed Area Plan and the City’s proposed General Plan (which were both developed through the joint OVOV planning effort) based on six generalized land use categories. As provided in the table, buildout of the OVOV land uses would result in an approximately 121 percent increase in valley-wide trip ends¹² over existing trip ends. A comparison of existing conditions to traffic forecasts based on buildout of the County’s proposed Area Plan and the City’s proposed General Plan (the proposed land uses along with the proposed highway network) is also provided in Table 3.2-8. Table 3.2-10, ICU and LOS Summary for Principal Intersections – Existing Conditions vs. OVOV Buildout Conditions (With Highway Plan Roadways), identifies the LOS ratings at principal intersections in the study area under existing conditions and under buildout of the Highway Plan identified in the County’s proposed Area Plan and the City’s proposed General Plan.

All of the analysis of “on the ground” (baseline) conditions to conditions under buildout of the County’s proposed Area Plan and the City’s proposed General Plan was conducted to address the thresholds of

¹¹ One Valley One Vision Valley-Wide Traffic Study, Austin-Foust Associates, June 2010, 2-19.

¹² Trip ends are daily trip ends where one trip is equal to two trip ends. One Valley One Vision Valley-Wide Traffic Study, Austin-Foust Associates, June 2010, 2-18.

significance within Section 3.2, Transportation and Circulation, of the Revised Draft EIR. All remaining sections of the Revised Draft EIR conduct similar “Ground to Plan” analysis as appropriate.

Response 10

The comment states that the California Air Resources Board (CARB) recently established per capita vehicle miles traveled (VMT) reduction targets for the Southern California region pursuant to Senate Bill (SB) 375 and that the Revised Draft EIR fails to provide VMT information in a straightforward manner and to discuss consistency with SB 375. The comment further opines that because the proposed Area Plan would increase trip ends by 121 percent, the proposed Area Plan “will undermine” the ability of the region to meet the SB 375 targets adopted by CARB.¹³

The Revised Draft EIR provides a discussion of SB 375 on pages 3.4-28 and 3.4-29 of Section 3.4, Global Warming and Climate Change. As stated on these pages, SB 375 required CARB to set regional greenhouse gas (GHG) reduction targets for California’s Metropolitan Planning Organizations (MPOs). SB 375 requires the MPOs to adopt, as part of their regional transportation plan (RTP), a “sustainable communities strategy” (SCS) that demonstrates how the region will meet its target for reducing GHG emissions through integrated land use, housing and transportation planning. For SCAG’s region, CARB adopted per capita GHG reduction targets of 8 percent by 2020 and 13 percent by 2035, relative to the 2005 per capita levels for the same region. These targets apply to the SCAG region as a whole, and not to individual subregions or cities.

SCAG will develop its SCS as an element of its 2012 RTP. The draft 2012 RTP, including the SCS element, is currently scheduled for public release in late 2011 (November/December). To date, SCAG has identified possible strategies for reducing the per capita VMT and GHG emissions from the land use and transportation sectors. These strategies include: mixing land uses (i.e., housing, retail, jobs); focusing new growth near transit; increasing housing densities within employment areas; and prioritizing infill development. While the bulk of the SB 375 reductions are expected to be achieved through VMT reductions, SCAG also is pursuing other non-VMT strategies that would result in vehicles emitting fewer GHGs per mile driven. These strategies include operational improvements to relieve roadway “bottlenecks;” speed limit reductions; and traffic signal coordination.¹⁴ Details regarding these and other strategies are expected to be included in the draft 2012 RTP.

To date, SCAG has taken a collaborative approach with local and subregional stakeholders and jurisdictions. During the initial target setting process, SCAG collaborated with jurisdictions to develop

¹³ For additional information regarding CARB’s SB 375 efforts, please see <http://arb.ca.gov/cc/sb375/sb375.htm>.

¹⁴ Southern California Association of Governments, “SB 375 Regional Implementation Process, Presentations, North Los Angeles County,” http://www.scag.ca.gov/sb375/pdfs/ts/SB375TargetSetting_NorthLA.pdf.

growth forecasts and identified the local level of commitment to various GHG-reducing land use and transportation strategies. SCAG is currently holding workshops with local and subregional stakeholders and jurisdictions to seek commitments on specific strategy elements to be included in the draft 2012 RTP. The County is committed to participating in the preparation of the SCS and coordinating with SCAG.

SCAG has not yet adopted its SCS, however, and CEQA does not require that the proposed Area Plan's consistency with SCAG's ultimate SCS be assessed; such an evaluation would be speculative. (See, e.g., *State CEQA Guidelines* Section 15145.) Government Code section 65080(b)(2)(K) provides:

"Neither a sustainable communities strategy nor an alternative planning strategy regulates the use of land [...] Nothing in a sustainable communities strategy shall be interpreted as superseding the exercise of land use authority of cities and counties within the region [...] Nothing in this section shall require a city's or county's land use policies and regulations, including its general plan, to be consistent with the regional transportation plan or an alternative planning strategy."

In any event, the proposed Area Plan contains policies that would guide future development in the area that would reduce VMT (for example, see Revised Draft EIR, pp. 3.2-55 to 3.2-57. The following are further examples of policies included in the Revised Draft EIR that would reduce VMT:

Policy LU 1.1.3: Discourage urban sprawl into rural areas by limiting non-contiguous, "leap-frog" development outside of areas designated for urban use.

Policy LU 1.1.5: Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.

Policy LU 3.2.1: Require provision of adequate walkways in urban residential neighborhoods that provide safe and accessible connections to destinations such as schools, parks, and neighborhood commercial centers.

Policy LU 5.2.1: Designate higher-density residential uses in areas served by public transit and a full range of support services.

According to the California Air Pollution Control Officer's Association (CAPCOA) guidance for quantifying project-level GHG reductions, projects that are located in suburban centers would reduce

VMT by 10 percent compared to the statewide average.¹⁵ Compact infill development would reduce VMT by 30 percent compared to the statewide average.¹⁶ The proposed Area Plan policies, such as the examples given above, would guide future development such that projects would be concentrated at infill locations and close to suburban and urban centers and transit locations. As a result, as future development projects are proposed, the proposed Area Plan's policies would guide these developments towards reductions in VMT consistent with CAPCOA guidance and SB 375. According to information from SCAG, it is recognized that the proposed Area Plan creates more transit-oriented development, enhances the jobs/housing balance, and reduces Valley-wide GHG emissions.¹⁷

The comment also requests "basic information on current VMT." This information is available in Appendix 3.2 (Austin-Foust's One Valley One Vision Valley-Wide Traffic Study, dated June 2010) of the Revised Draft EIR. Specifically, Table 2-5: Trip Length and VMT Comparison, in Appendix 3.2, identifies the total VMT under existing conditions (as of 2004) as 13,428,000. The Traffic Study also states:

"In comparison to existing conditions, the proposed OVOV land uses result in approximately 98 percent more daily vehicle trips, but with just a 68 percent increase in daily VMT. Average trip length is reduced by 15 percent with the proposed land uses. With the implementation of the Highway Plan along with the proposed land uses, the VMT increase is approximately 60 percent over existing conditions, and average trip lengths are reduced by 19 percent in comparison to existing conditions." (Revised Draft EIR, Appendix 3.2 [Traffic Study, p. 2-19].)

Response 11

The comment opines that the proposed Area Plan would result in an "incredible increase" in greenhouse gas (GHG) emission levels, as compared to existing conditions. The comment concludes that this increase "will significantly undermine" the mandates of AB 32 and the goals set forth in Executive Order No. S-3-05. The comment also is critical of the Revised Draft EIR's "vague and subjective comparison" of the proposed Area Plan to GHG emission reduction strategies identified by other entities. To preface, the comment subjectively characterizes the proposed Area Plan's emissions levels as "incredible." While there would be a change in emission levels should the proposed Area Plan be adopted (see **Response 4**), the County does not concur with the characterization of this change as "incredible," particularly because of the absence of scientific and factual information regarding what particular quantities of GHG emissions are significant (as climate change is a global issue).

¹⁵ California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, (2010) 159-160.

¹⁶ California Air Pollution Control Officers Association, *Quantifying Greenhouse Gas Mitigation Measures*, (2010) 159-160.

¹⁷ Southern California Association of Governments, "SB 375 Regional Implementation Process, Presentations, North Los Angeles County," http://www.scag.ca.gov/sb375/pdfs/ts/SB375TargetSetting_NorthLA.pdf.

In light of the scientific uncertainties associated with the quantitative aspect of the analysis, Section 3.4, Global Climate Change, of the Revised Draft EIR also assessed the consistency of the proposed Area Plan with GHG reduction strategies identified by various agencies and entities:

- Table 3.4-7, Consistency of Sustainable Strategies with AB 32 Scoping Plan Measures;
- Table 3.4-9, Consistency with the 2006 Climate Action Team Report;
- Table 3.4-10, Consistency with Office of Planning and Research Suggested Measures;
- Table 3.4-11, Attorney General’s Recommended General Plan Mitigation Measures; and
- Appendix 3.4 [containing a consistency analysis of the proposed Area Plan relative to reduction strategies recommended by CAPCOA].

As discussed in the above-referenced tables and appendix, the proposed Area Plan is generally consistent with the identified GHG reduction strategies and, therefore, in line with AB 32 and Executive Order No. S-3-05. As the comment does not object to any specific aspect of the consistency assessment, no more specific of a response can be provided.

Of note, the analysis presented in Section 3.4 of the Revised Draft EIR is consistent with *State CEQA Guidelines* Section 15064.4(a)(2), which recognizes that lead agencies shall have the discretion to “[r]ely on a *qualitative analysis* or performance based standards” when assessing the significance of a project’s GHG emissions. (Italics added.) The analysis also is consistent with *State CEQA Guidelines* Section 15064.4(b)(1) because Section 3.4 of the Revised Draft EIR disclosed the extent to which the proposed Area Plan would increase GHG emissions as compared to the existing environmental setting (see **Response 4**).

Finally, to some extent, this comment is also an introduction to comments that follow. Therefore, the commenter is referred to **Responses 12** through **54** for additional responsive information.

Response 12

The comment states that the Revised Draft EIR “makes no effort to express the extent to which adding this enormous [quantity] of emissions...would result in a significant impact.”

However, as noted in **Response 11**, above, there is no consensus amongst scientists, regulatory agencies, or the environmental community regarding what specific quantity of greenhouse gas (GHG) emissions is “significant” for purposes of CEQA. In fact, the limited guidance adopted or being drafted by air quality management districts in California inconsistently sets numerically significant standards. For example, the Bay Area Air Quality Management District (BAAQMD) has identified a 10,000 metric tons cap for stationary source projects, but a 1,100 metric tons cap for land use development projects. The South Coast

Air Quality Management District's (SCAQMD) draft proposal also identifies several numeric caps, including 1,400 metric tons for commercial projects, 3,000 metric tons for mixed-use projects, and 3,500 metric tons for residential projects.¹⁸ For GHGs, like other criteria air pollutants, there does not appear to be a clear scientific basis upon which to establish different numeric criteria for different source types. Also, neither BAAQMD nor SCAQMD seem to be basing their criteria on scientific evidence of project significance. Instead, each district is trying to capture a certain percentage of projects by its thresholds.¹⁹

The County conservatively elected to find that the proposed Area Plan's increase over existing emissions levels would be significant. Given the unsettled state of the relevant science, this finding is reasonable and appropriate. As future land use development proposals requiring discretionary approval within the unincorporated Santa Clarita Valley are presented for the County's consideration, additional project-level environmental analysis will be required relative to the issue of global climate change. Such analysis would account for any refinements in the state of the science.

In addition, the proposed Area Plan contains numerous policies that would guide future development. These policies are listed in full in Section 3.4, Global Warming and Climate Change of the Revised Draft EIR. Also, the commenter is referred to **Response 11**, above.

Response 13

The comment states that the proposed Area Plan should be evaluated using the Bay Area Air Quality Management District's (BAAQMD's) significance guidance, which SCAQMD has also informally proposed as a draft threshold for General Plans. The comment also states that the year 2020 target should be viewed as a milestone year, while establishing an emissions trajectory that is consistent with long-term (2050) greenhouse gas (GHG) emission reduction goals identified in Executive Order No. S-3-05. Therefore, the comment asks that impacts be analyzed "in the context of a per capita threshold for both 2020, and a more stringent 2030 threshold." First, BAAQMD's guidance was prepared for local land use agencies within its jurisdiction. No portion of Los Angeles County is within BAAQMD's jurisdictional

¹⁸ SCAQMD, Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #15 (September 28, 2010), Slide 3, available at <http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/ghgmtg15-web.pdf>.

¹⁹ See, e.g., BAAQMD, California Environmental Quality Act Guidelines Update: Proposed Thresholds of Significance (December 7, 2009), p. 19, available at <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Proposed%20Thresholds%20of%20Significance%20Dec%207%202009.ashx> ["Staff recommends a 1,100 MT CO₂e per year threshold. Choosing a 1,100 MT mass emissions significance threshold level (equivalent to approximately 60 single-family units), would result in about 59 percent of all projects being above the significance threshold and having to implement feasible mitigation measures to meet their CEQA obligations. These projects account for approximately 92 percent of all GHG emissions anticipated to occur between now and 2020 from new land use development in the SFBAAB."].

boundaries, which are illustrated on the Internet at <http://www.baaqmd.gov/The-Air-District/Jurisdiction.aspx>. Accordingly, the County declines to adopt BAAQMD's guidance.

Second, the referenced SCAQMD guidance is still in draft form. In fact, SCAQMD staff has not even issued a formal proposal for its Board's consideration. As of September 2010 (the date of SCAQMD's last stakeholder working group), SCAQMD staff presented the following draft performance standards for consideration:

- 6.6 metric tons of CO₂e per year by 2020; and
- 4.1 metric tons of CO₂e per year by 2035

As SCAQMD's draft guidance has not yet been endorsed by its Board, the County declines to adopt SCAQMD's draft guidance.

Nonetheless, and for informational purposes only, the County's proposed Area Plan and City's proposed General Plan (which were both developed as part of the joint OVOV planning effort) together would accommodate a total population of 460,000 to 485,000 residents in the Santa Clarita Valley at full buildout of all proposed land use designations in the County's proposed Area Plan and the City's proposed General Plan, an increase of approximately 208,000 to 233,000 residents over 2008 conditions. At buildout of the County's proposed Area Plan and the City's proposed General Plan, approximately 217,910 to 286,254 jobs would exist in the Santa Clarita Valley, an increase of approximately 98,322 to 128,850 new jobs.

Using the low-end population and job figures, the net increase in the service population would be 306,322. (208,000 + 98,322). According to the Revised Draft EIR, the County's proposed Area Plan and the City's proposed General Plan would result in a net GHG emission increase of about 1,848,400 MTCO₂e per year over existing conditions, thereby resulting in about 6.0 metric tons of CO₂e per year. This amount is consistent with SCAQMD's draft 2020 target, but inconsistent with the draft 2035 target. (Of note, as additional regulatory enactments occur at the federal and state level [relative to tailpipe emissions, renewable portfolio standards, etc.], the anticipated emissions inventory will decrease, thereby resulting in an even lower metric tons of CO₂e per year estimate.)

As to the comment's specific request that the proposed Area Plan's GHG emissions be analyzed relative to a "more stringent 2030 threshold consistent with a 2050 emissions reduction trajectory," the referenced 2050 reduction target is not the subject of a legislative enactment, but rather is contained in Executive Order No. S-3-05. Specifically, that Executive Order aspires for California to emit 80 percent less GHG emissions in 2050 than it emitted in 1990. In light of the uncertainties regarding the specific reduction

strategies and methods needed for California to achieve the 2050 reduction goal identified in Governor Schwarzenegger's Executive Order S-3-05, the impact of the proposed Area Plan on the 2050 reduction goal is considered too speculative to assess at this time. (See *State CEQA Guidelines* Section 15145.) These uncertainties are reflected in CARB's Scoping Plan (December 2008):

"Reducing our greenhouse gas emissions by 80 percent will require California to develop new technologies that dramatically reduce dependence on fossil fuels, and shift into a landscape of new ideas, clean energy, and green technology."

"[T]he measures needed to meet the 2050 goal are too far in the future to define in detail"

"Governor Schwarzenegger signed Executive Order S-3-05, calling for the State to reduce greenhouse gas emissions to 1990 levels by 2020 and to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050. The 2020 goal was established to be an aggressive, but achievable, mid-term target, and the 2050 greenhouse gas emissions reduction goal represents the level scientists believe is necessary to reach levels that will stabilize climate." (Scoping Plan, pp. ES-2, 4.)

Response 14

The comment states that the Revised Draft EIR fails to adopt all feasible mitigation measures and alternatives, and is critical of the recommended mitigation measures, describing them as "improperly vague, unenforceable and deferred." The comment is also critical of the phrasing of the proposed Area Plan's policies, describing them as "hortatory." For information responsive to this latter point, please see **Response 15**, below.

While the comment fails to provide concrete examples of the alleged inadequacies in the proposed mitigation measures, the proposed mitigation measures set forth in Section 3.4 of the Revised Draft EIR are not inadequate under CEQA. Rather, the measures are designed to secure meaningful GHG emission reductions from future land use development projects requiring discretionary approval that may be permitted under the proposed Area Plan. That said, in response to this comment and at the direction of County staff, certain mitigation measures recommended in Section 3.4 (see pages 3.4-136 to 3.4-139) have been revised as follows, deletions shown in ~~strikeout~~ and additions in double-underline:

3.4-1 Prior to the issuance of building permits, the applicant shall provide evidence of green building practices and design elements that reduce GHG emissions, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See e.g., California Department of Housing and Community Development's Green Building & Sustainability Resources handbook at www.hcd.ca.gov/hpd/green_build.pdf; e.g., the American Institute of Architects at <http://www.wiki.aia.org/Wiki%20Pages/Home.aspx>.) For

discretionary projects, this evidence on GHG reduction measures shall also be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-2 Prior to the issuance of building permits, the applicant shall provide evidence of energy efficient designs, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards, such as those found in the Leadership in Energy and Environmental Design (LEED) Green Building Ratings and/or comply with Title 24, Part 11, the California Green Building Standards Code. For discretionary projects, this evidence on energy-efficient design shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-3 Prior to the issuance of building permits, the applicant shall provide evidence of energy efficient lighting, heating and cooling systems, appliances, equipment, and control systems, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (Information about ENERGY STAR-certified products is are available at http://www.energystar.gov/index.cfm?fuseaction=find_a_product; see also the California Energy Commission's database of appliances meeting federal or state energy standards at <http://www.appliances.energy.ca.gov>; see the Electronic Product Environmental Assessment Tool for ranking of energy efficient computer equipment at <http://www.epeat.net/AboutEPEAT.aspx>; see the Online Guide to Energy Efficient Commercial Equipment at http://www.aceee.org/ogeece/ch1_index.htm.) For discretionary projects, this evidence on energy efficient systems shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-4 Prior to the issuance of building permits, the applicant shall provide evidence of light colored "cool" roofs and cool pavements, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See Consumer Energy Center, Cool Roofs at <http://www.consumerenergycenter.org/coolroof/>.) For discretionary projects, this evidence on cool roofs and pavements shall be provided to and considered by the

Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-5 Prior to the issuance of building permits, the applicant shall provide evidence of efficient lighting (including LEDs) for traffic, street, and other outdoor lighting purposes, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See http://www.energy.ca.gov/efficiency/partnership/case_studies/Tech_AsstCity.pdf.) For discretionary projects, this evidence on efficient lighting shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-6 Prior to the issuance of building permits, the applicant shall provide evidence of efficient pumps and motors for pools and spas, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See http://www.consumerenergycenter.org/home/outside/pools_spas.html.) For discretionary projects, this evidence on pool and spa motors and pumps shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-7 Prior to the issuance of building permits, the applicant shall provide evidence of the ability to install solar, and solar hot water heaters, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://www.gosolarcalifornia.org/builders/index.html>; see also the California Public Utility Commission's website for solar water heating incentives at <http://www.cpuc.ca.gov/puc/energy/solar/swh.htm>.) For discretionary projects, this evidence on solar issues shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-8 Prior to the issuance of building permits for, the applicant shall provide evidence to of water-efficient landscapes, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/technical.cfm>; see also <http://www.ciwmb.ca.gov/organics/Xeriscaping>.) For discretionary projects, this evidence on water efficient landscaping

shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-9 Prior to the issuance of building permits, the applicant shall provide evidence of water efficient irrigation systems and devices, such as soil-based irrigation controls and use water-efficient irrigation methods, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See http://www1.eere.energy.gov/femp/program/waterefficiency_bmp5.html; see also <http://www.water.ca.gov/wateruseefficiency/landscape/>.) For discretionary projects, this evidence on efficient irrigation methods shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-12 Prior to the issuance of building permits, the applicant shall provide evidence of consistency with "smart growth" principles to reduce GHG emissions (i.e., ensure mixed use, infill and higher density projects provide alternatives to individual vehicle travel and promote efficient delivery of goods and services). (See <http://www.epa.gov/smartgrowth/index.htm>.) For discretionary projects, this evidence on "smart growth" consistency shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-13 Prior to implementing project approval, the applicant shall preserve existing trees, to the extent feasible and consistent with mitigation measures, encourage the planting of new trees consistent with the final landscape palettes, and create open space where feasible. (See <http://www.epa.gov/dced/brownfields.htm>.) For discretionary projects, this evidence on tree preservation and planting shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

Response 15

The comment is critical of the phrasing of the proposed Area Plan's policies, and requests that the proposed Area Plan provide more information regarding the implementation mechanism for various policies. The comment cites Policy LU 7.1.2 as an example of a policy contained in the proposed Area Plan that is "meaningless." To preface, as illustrated in Section 3.4 of the Revised Draft EIR, the proposed

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

Area Plan is based on a three-part hierarchy of Goals, Objectives, and Policies. Policy LU 7.1.2 furthers implementation of Goal LU 7 and Objective LU 7.1:

Goal LU 7: Environmentally responsible development through site planning, building design, waste reduction, and responsible stewardship of resources.

Objective LU 7.1: Achieve greater energy efficiency in building and site design.

Policy LU 7.1.2: Promote the use of solar panels and renewable energy sources in all projects.

(Revised Draft EIR, p. 3.4-53.) Additionally, to ensure implementation of the Goals, Objectives, and Policies, each element of the proposed Area Plan concludes with a list of “Actions.” In the case of Policy LU 7.1.2, the following action items from the proposed Area Plan ensure its implementation:

Action 1: Revise the County Zoning Ordinance and Map, including Community Standards Districts, as deemed necessary to ensure consistency with the Land Use Map and the goals and policies of the Land Use Element.

Action 2: Through the review process for new discretionary development applications, require all new development to be consistent with the Land Use Map and the goals and policies of the Land Use Element.

The use of renewable energy would also be “promoted” through implementation of Mitigation Measure 3.4-7, which requires project applicants to provide evidence of the ability to install solar and solar water heaters in accordance with specified requirements, as well as Mitigation Measure 3.4-16, which requires compliance with the Governor’s Million Solar Roofs Plan. (See **Response 14**, above, for revised Mitigation Measure 3.4-7.) In addition, as discussed in **Response 3**, above, the County has an established Green Building Program and retains the authority and discretion to amend the operative ordinances under that program, as well as to establish new ordinances. That authority and discretion provides the County with a means by which to implement Policy LU 7.1.2.

In addition, note that the phrasing of the policies is consistent with the nature of the proposed Area Plan, which would not directly result in land use development if adopted. Rather, as future land use development proposals are presented to the County for discretionary approval, such proposals would be evaluated for consistency with the proposed Area Plan, including all applicable Goals, Objectives, and Policies. In the case of solar and other renewable energy sources, County staff does not recommend narrowly tailoring the implementation mechanism(s) at this time because, in many cases, the appropriate mechanism will be dependent upon the status of renewable energy technologies, market and economic conditions, development type, location, and other factors.

Response 16

The comment states that consideration of greenhouse gas (GHG) impacts through a Climate Action Plan should be part of the Revised Draft EIR, not a post-decisional addendum. The County of Los Angeles is in the process of developing a Countywide Climate Action Plan for all of the unincorporated areas within its jurisdiction, including those within the Santa Clarita Valley, which will be adopted after the County adopts an updated General Plan. However, a Climate Action Plan is not the only measure to reduce GHG emissions. Policies under the proposed Area Plan, if adopted, would continue to be implemented as a means to guide development in the unincorporated Santa Clarita Valley regardless of the development of the Countywide Climate Action Plan. Please also see **Response 18** below for specific Area Plan Policies which serve to reduce greenhouse gas emissions.

Response 17

The comment states that the County will participate in the preparation of a regional Sustainable Communities Strategy (SCS) Plan to meet regional greenhouse gas (GHG) reduction targets required by SB 375. The comment is critical of this commitment because the SCS only addresses transportation-related emissions. The comment also states that the proposed Area Plan will undermine the SCS. The comment therefore requests that the County either delay consideration of the proposed Area Plan until adoption of the SCS or should provide additional analysis of the proposed Area Plan's impact on vehicle miles traveled (VMT) relative to the California Air Resource Board's (CARB) adopted SB 375 reduction targets for the region.

Please see **Response 10**, above for information responsive to this comment. As discussed in that response, the Southern California Association of Governments (SCAG) is the entity responsible for adoption of the region's SCS. Therefore, practically speaking, all the County can do is "participate" in the process. The County is not the lead agency for purposes of SB 375 compliance. Rather, SB 375 is directed to Metropolitan Planning Organizations, such as SCAG.

As also explained in **Response 10**, SB 375 does not trump the local land use planning process or the County's discretion. SCAG itself has noted that it "does not dictate local land use." Because SCAG does not dictate land use development and because the development of the SCS is based on a collaborative approach, it is not necessary for the County to delay its efforts relative to the proposed Area Plan for purposes of the SCS, nor has SCAG requested or recommended that delay.

The traffic report commissioned for the joint OVOV planning effort, which analyzed buildout of the County's proposed Area Plan and buildout of the City's proposed General Plan, for the proposed project provides data on vehicle miles traveled (VMT) under 2004 conditions and at buildout of the OVOV Planning Area, which includes the City and the unincorporated portions of the Santa Clarita Valley (refer

to Table 2-5 in the traffic report, provided in Appendix 3.2 of the Revised Draft EIR). According to the traffic report, the total VMT was estimated at 13,428,000 miles under year 2004 conditions and 21,532,000 miles at buildout of the County's proposed Area Plan and the City's proposed General Plan. The total estimated population for the OVOV Planning Area is 252,000 under year 2008 conditions and 460,000 to 485,000 at buildout of the proposed Area Plan and the City's proposed General Plan. These numbers indicate that the rate of growth in VMT is approximately 60 percent while the rate of growth in population is approximately 83 percent. On a per capita basis, this results in per capita VMT of 53.3 miles per capita and 46.8 miles per capita, respectively, which indicates that the County's proposed Area Plan and the City's proposed General Plan would reduce per capita VMT by approximately 12 percent. While the VMT data and the population data for existing conditions are taken from different years (but in each case, using the most recent data available at the time the Notice of Preparation was issued), the calculation actually results in a conservative calculation comparison. The 2008 VMT would be higher than 13,428,000, which would result in an increase in the per capita VMT calculation under existing conditions. Therefore, while total VMT would increase under the buildout conditions of the County's proposed Area Plan and the City's proposed General Plan, per capita VMT would be expected to decrease by at least 12 percent. Therefore, while the rate of growth in trips would exceed the rate of growth in population, the length of the trips would decrease due to an a higher proportion of residents commuting within the Santa Clarita Valley as opposed to commuting to destinations outside of the Santa Clarita Valley.

Response 18

The comment states that the Revised Draft EIR should consider mitigation measures outlined in the California Air Pollution Control Officer Association's (CAPCOA) *Quantifying GHG Mitigation Measures* document. Section 3.4 Global Climate Change, page 3.4-135 addresses this request as follows:

"Consistency with CAPCOA Recommended Measures

As previously discussed, the CAPCOA CEQA and Climate Change white paper includes a list of GHG reduction measures that can be included as general plan design features, required changes to the general plan, or mitigation measures. The measures are intended to provide recommendations to lead agencies that may be helpful in carrying out their duties under CEQA with respect to greenhouse gases and climate change impacts. A consistency analysis of the OVOV General Plan and Area Plan and the CAPCOA recommended measures is provided in **Appendix 3.4**. As shown in the analysis, the OVOV General Plan and Area Plan would be generally consistent with the CAPCOA measures."

The comment also recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Requiring a minimum number of units to be located in the downtown area.

The County reviewed the 2008 Memorandum of Agreement entered into by and between the City of Stockton, the California Attorney General, and the Sierra Club, which is cited by the comment in support of the feasibility of this GHG reduction strategy. Based on its review, the County determined that requiring a minimum number of units would be arbitrary, and ignores the fact that market and economic conditions influence development proposals.

It is also unclear what the comment means by the “downtown area.” The unincorporated Santa Clarita Valley, which is covered by the proposed Area Plan, does not contain a downtown area. The proposed Area Plan does not include any cities because the County has no jurisdiction over cities. Therefore, to the extent that the comment is referring to the downtown area of either the City of Los Angeles or the City of Santa Clarita, the comment is not applicable to the County. Finally, the County’s jurisdictional areas, for purposes of the proposed Area Plan, do not contain a “downtown area” consistent with the general meaning of that phrase.

In any event, the proposed Area Plan contains policies that would promote higher density development. Representative policies that were included in Section 3.3, Air Quality and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.1.3: Discourage urban sprawl into rural areas by limiting non-contiguous, “leap-frog” development outside of areas designated for urban use.

Policy LU 1.1.5: Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.

Policy LU 1.2.13: Encourage use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses, access to public transit, and opportunities for living and working within the same community.

Policy LU 2.1.2: On the Land Use Map, integrate land use designations in a manner that promotes healthy, walkable communities, by providing an appropriate mix of residential and service uses in proximity to one another.

Policy LU 2.3.2: Either vertical or horizontal integration of uses shall be allowed in a mixed use development, with an emphasis on tying together the uses with appropriate pedestrian linkages.

- Policy LU 2.3.5:** Mixed-use developments shall be designed to create a pedestrian-scale environment through appropriate street and sidewalk widths, block lengths, relationship of buildings to streets, and use of public spaces.
- Policy LU 3.1.3:** Promote opportunities for live-work units to accommodate residents with home-based businesses.
- Policy LU 3.1.7:** Promote development of housing for students attending local colleges, in consideration of access to campuses to the extent practicable.
- Policy LU 3.2.1:** Require provision of adequate walkways in urban residential neighborhoods that provide safe and accessible connections to destinations such as schools, parks, and neighborhood commercial centers.
- Policy LU 3.2.2:** In planning residential neighborhoods, include pedestrian linkages, landscaped parkways with sidewalks, and separated trails for pedestrians and bicycles, where appropriate and feasible.
- Policy LU 5.2.1:** Designate higher-density residential uses in areas served by public transit and a full range of support services.

In addition, the proposed Area Plan proposes high-density residential land use designations that would allow up to 30 dwelling units per acre, as set forth in Section 2.0, Project Description, of the Revised Draft EIR:

“H30 – Residential 30 (UR5 – Urban Residential 5)

The Residential 30 designation provides for medium to high density apartment and condominium complexes in areas easily accessible to transportation, employment, retail, and other urban services. Allowable uses in this designation include multiple family dwellings at a minimum density of 18 dwelling units per 1 acre and a maximum density of 30 dwelling units per 1 acre. Specific allowable uses and development standards shall be determined by the underlying zoning designation. Supportive commercial and institutional uses serving the local area, such as stores, restaurants, personal services, limited medical services, and retail sale of specialty goods for neighborhood residents, may be allowed in a proposed development project within this designation without a Plan Amendment, but may require a zone change and/or other approvals. Live-work units may also be allowed, subject to the requirements of the underlying zoning designation.” (Revised Draft EIR, p. 2.0-37; see also Revised Draft EIR, 3.1-21 and Revised Draft EIR, Figure 3.1-2, Proposed Land Use Policy Map.)

These proposed land use designations would generally be located near the City of Santa Clarita, near commercial land uses, and along major transit corridors. Refer to Section 3.1, Land Use, of the Revised Draft EIR for a map showing the locations of the proposed land use designations. Thus, while the County's jurisdictional areas, for purposes of the proposed Area Plan, do not contain a "downtown area" consistent with the general meaning of that phrase, the Area Plan proposes high-density residential land use designations that require a minimum number of dwelling units. As such, as evidenced by the policies and proposed land use designations referenced above, the proposed Area Plan accounts for the comment's recommendation. Therefore, the adoption of additional measures are not required.

Response 19

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Providing incentives to promote infill development in the downtown area, including, but not limited to: reduced impact fees, less restrictive height limits, less restrictive setback requirements, less restrictive parking requirements, subsidies, and a streamlined permitting process.

See **Response 18** above regarding a lack of a downtown area in the County's jurisdictional areas for purposes of the proposed Area Plan. In addition, the proposed Area Plan contains policies that would incentivize infill development. Representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.1.2: On the Land Use Map, concentrate urban development within flatter portions of the Santa Clarita Valley floor in areas with limited environmental constraints and served with infrastructure.

Policy LU 1.1.3: Discourage urban sprawl into rural areas by limiting non-contiguous, "leap-frog" development outside of areas designated for urban use.

Policy LU 1.1.5: Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.

Policy LU 1.2.13: Encourage use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses, access to public transit, and opportunities for living and working within the same community.

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

- Policy LU 2.1.2:** On the Land Use Map, integrate land use designations in a manner that promotes healthy, walkable communities, by providing an appropriate mix of residential and service uses in proximity to one another.
- Policy LU 2.3.2:** Either vertical or horizontal integration of uses shall be allowed in a mixed-use development, with an emphasis on tying together the uses with appropriate pedestrian linkages.
- Policy LU 2.3.5:** Mixed-use developments shall be designed to create a pedestrian-scale environment through appropriate street and sidewalk widths, block lengths, relationship of buildings to streets, and use of public spaces.
- Policy LU 4.3.5:** Support efforts by the City of Santa Clarita to coordinate with property owners and environmental agencies, and provide assistance as appropriate, to promote clean-up and redevelopment of the Whittaker Bermite property as a business and employment center.
- Policy C 1.2.6:** Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.
- Policy C 4.1.6:** Provide incentives to promote transit-oriented development near rail stations.
- Policy C 5.4.1:** Establish transit impact fee rates that are based on the actual impacts of new development on the transit system, and regularly monitor and adjust these fees as needed to ensure adequate mitigation.
- Policy C 5.4.2:** Evaluate the feasibility of establishing a joint City/County transit impact fee to equitably distribute the capital costs of transit system expansion to meet the needs of new development in both County and City areas of the Valley.
- Policy C 5.4.3:** Seek funding for transit system expansion and improvement from all available sources, including local, state, and federal programs and grants.

As listed above, the proposed Area Plan contains policies that would promote infill development by concentrating urban land use development areas in the flatter portions of the Santa Clarita Valley, integrating vertical and horizontal developments, providing flexible standards for parking and roadway design in transit-oriented development areas, providing incentives to promote transit oriented development near rail stations, supporting efforts by the City of Santa Clarita to provide assistance for the redevelopment of the Whittaker Bermite property, establishing transit impact fee rates that are based

on the actual impacts of new development on the transit system, and seeking funding for transit system expansion and improvement from all available sources. Also, of note, CEQA contains streamlining provisions for transit-oriented projects, which often are infill in nature. (See Public Resources Code sections 21155-21155.3.) Thus, existing law also often acts as an incentive to infill development. Lastly, existing County Department of Regional Planning procedures allow certain types of major infill projects to qualify for expedited case processing.

The proposed Area Plan does not contain specific requirements for less restrictive height limits, less restrictive setback requirements, or a streamlined permitting process for infill developments. Rather the proposed Area Plan generally encourages the use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses through its policies.

Response 20

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Ensuring that development on the outskirts of the Area Plan does not grow in a manner that is out of balance with development of infill. Possible measures to achieve this objective are set forth in the AG Settlement with the City of Stockton.

The proposed Area Plan already contains policies that would promote infill development and discourage greenfield development in non-urbanized fringe areas. Representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.1.2: On the Land Use Map, concentrate urban development within flatter portions of the Santa Clarita Valley floor in areas with limited environmental constraints and served with infrastructure.

Policy LU 1.1.3: Discourage urban sprawl into rural areas by limiting non-contiguous, “leap-frog” development outside of areas designated for urban use.

Policy LU 1.1.5: Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.

Policy LU 1.2.13: Encourage use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses, access to public transit, and opportunities for living and working within the same community.

Policy LU 2.1.2: On the Land Use Map, integrate land use designations in a manner that promotes healthy, walkable communities, by providing an appropriate mix of residential and service uses in proximity to one another.

Also, the unincorporated Santa Clarita Valley contains existing rural land uses. The proposed Area Plan contains policies that would restrict urban-style developments in these rural areas and would protect the rural nature and characteristics of these areas. Representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.1.1: Where appropriate, protect mountains and foothills surrounding the Valley floor from urban development by designating these areas as Open Space or Rural Land on the Land Use Map.

Policy LU 1.1.6: Preserve the rural lifestyle in canyons and low-density, outlying areas of the Santa Clarita Valley, through designating these areas as Rural Land on the Land Use Map where appropriate.

Policy LU 1.3.3: Discourage development on ridgelines and lands containing 50% slopes so that these areas are maintained as natural open space.

Policy LU 1.3.4: Encourage density transfers where appropriate to facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity, provided that urban densities (exceeding one dwelling unit per acre) are not permitted in rural areas.

The proposed Area Plan covers the unincorporated portions of the Santa Clarita Valley in the County. Therefore, it is not possible for the proposed Area Plan to specify an infill housing target within a city limit or downtown border, as was done in the City of Stockton settlement agreement with the Attorney General. Nonetheless, the residential land use designations in the proposed Area Plan would increase multi-family housing by 170 percent over existing 2004 conditions compared to the increase for single-family housing of 69 percent. The proposed Area Plan proposes high-density residential land use designations that would allow up to 30 dwelling units per acre. These proposed land use designations would generally be located near the City of Santa Clarita, near commercial land uses, and along major

transit corridors. Refer to Section 3.1, Land Use, of the Revised Draft EIR for a map showing the locations of the proposed land use designations. While the proposed Area Plan excludes the City of Santa Clarita and the City's downtown area (to the extent that any portion of the City could be considered a downtown area), it does contain proposed high-density residential land use designations that are generally located on the Valley floor close to existing higher density areas and along transit corridors. Therefore, the proposed Area Plan, through its proposed Land Use Policy Map, promotes higher density infill development and discourages greenfield development in non-urbanized areas. Thus, no changes to the proposed Area Plan or Draft EIR are required.

Response 21

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use, indicating that this is a measure identified by the California Air Pollution Control Officers Association (CAPCOA):

- Altering fee structures to encourage infill and mixed use, discourage sprawl through increasing or reducing fees proportionately with distance from city center or preferred transit sites, increasing fields for greenfield sites, and increasing or reducing fees based on the degree to which mixed uses are incorporated into the project.

Please see **Responses 18** through **20**, above, which list examples of policies already contained in the proposed Area Plan that encourage infill and mixed-use development, and discourage sprawl. In light of the comment's reference to fee structures, the proposed Area Plan's policies relating to fees also are specifically set forth below.

The proposed Area Plan contains policies and incentives that would promote infill development and discourage greenfield development in urban fringe areas. Representative policies that were included in Section 3.1, Land Use, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.2.14: Evaluate development fee schedules on an ongoing basis to determine fee incentives to attract development. [This policy was not specifically listed in the above-referenced sections of the Revised Draft EIR but is included in the proposed Area Plan.]

Policy LU 9.2.2: Require all new development mitigates its impact on existing sewer capacity by upgrading facilities when warranted or payment of a fee to allow construction of new facilities when needed. [This policy was not specifically listed in the above-

referenced sections of the Revised Draft EIR but is included in the proposed Area Plan.]

Policy C 2.6.2: Evaluate the feasibility of establishing a joint City/County Intelligent Transportation Management System (ITMS) impact fee for new development that is unable to otherwise mitigate its impacts to the roadway system through implementation of the adopted Highway Plan.

Policy C 5.4.1: Establish transit impact fee rates that are based on the actual impacts of new development on the transit system, and regularly monitor and adjust these fees as needed to ensure adequate mitigation.

Policy C 5.4.2: Evaluate the feasibility of establishing a joint City/County transit impact fee to equitably distribute the capital costs of transit system expansion to meet the needs of new development in both County and City areas of the Valley.

As explained in **Response 20**, above, the Santa Clarita Valley contains both urban and rural land uses. The proposed Area Plan contains policies that would restrict urban-style developments in these rural areas and would protect the rural nature and characteristics of these areas. The proposed Area Plan encourages and provides for the development of land uses in the appropriate areas. Urban-style land uses are concentrated in the Valley floor while rural land uses are located in the urban fringe areas. The proposed Area Plan does not implement a fee structure that would discourage development from occurring in the urban fringe areas, but rather encourages and promotes development that is appropriate for the desired characteristics of the area through its proposed Land Use Policy Map. As such, the proposed Area Plan accounts for the comment's recommendation and therefore no changes to the proposed Area Plan or Revised Draft EIR are required.

Moreover, given the current economic climate, the County is reluctant to endorse a tiered fee program which directly correlates to proximity to existing development, as suggested in the comment. Also, the County's policy is to pass on its actual costs to the development community through its fee programs. The County does not endorse the arbitrarily setting and raising or lowering fees in relation to development location if such fee amounts do not reflect the actual cost of the public service.

Finally, note that the CAPCOA model policies referenced in the comment are just that, models. CAPCOA is not a regulatory agency and there is no requirement that the County adopt and implement every model policy or GHG reduction strategy recommended by CAPCOA, particularly when the model policy would not be feasible.

Response 22

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Introducing flexible parking requirements based on location, density and range of land use, accessibility to public transit and carsharing services, area walkability, and/or housing tenure.

The proposed Area Plan contains policies that would promote flexible parking requirements. Representative policies that were included in Section 3.1, Land Use, Section 3.2, Transportation and Circulation, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 2.3.6: Provide parking alternatives in mixed-use developments, including subterranean parking and structured parking to limit the amount of surface area devoted to vehicle storage.

Policy LU 3.4.7: Minimize the prominence of areas devoted to automobile parking and access in the design of residential neighborhoods.

Policy LU 7.3.3: Seek methods to decrease impermeable site area where reasonable and feasible, in order to reduce stormwater runoff and increase groundwater infiltration, including use of shared parking and other means as appropriate.

Policy C 1.2.6: Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.

Policy C 2.2.6: Within residential neighborhoods, promote the design of “healthy streets” which may include reduced pavement width, shorter block length, provision of on-street parking, traffic-calming devices, bike routes and pedestrian connectivity, landscaped parkways, and canopy street trees.

Policy C 3.2.4: The City and County will encourage new commercial and retail developments to provide prioritized parking for electric vehicles and vehicles using alternative fuels.

Policy C 3.3.1: Evaluate parking standards and reduce requirements where appropriate, based on data showing that requirements are in excess of demand.

- Policy C 3.3.2:** In pedestrian-oriented, high density mixed use districts, provide for common parking facilities to serve the district, where appropriate.
- Policy C 3.3.3:** Promote shared use of parking facilities between businesses with complementary uses and hours, where feasible.
- Policy C 3.3.4:** Within transit-oriented development projects, provide incentives such as higher floor area ratio and/or lower parking requirements for commercial development that provides transit and ride-share programs.
- Policy C 3.3.5:** Encourage convenient short-term parking in high-activity areas, and all day parking at the periphery of the development areas.
- Policy C 3.3.6:** In the development review process, prioritize direct pedestrian access between building entrances, sidewalks and transit stops, by placing parking behind buildings where possible, to the sides of buildings when necessary, and always away from street intersections.
- Policy C 3.3.7:** Create parking benefit districts which invest meter revenues in pedestrian infrastructure and other public amenities wherever feasible.
- Policy C 3.3.8:** Establish performance pricing of street parking so that the costs are enough to promote frequent turnover, with a goal to keep 15 percent of spaces empty at all times, whenever feasible.

As provided above, the proposed Area Plan includes numerous policies that would provide flexible standards for parking, such as shared or common parking and pricing policies to promote short-term street parking, and would require that parking standards be evaluated and the requirements reduced where appropriate, based on data showing that requirements are in excess of demand. Therefore, the proposed Area Plan does not require the adoption of any additional measures to address this comment.

Response 23

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Tactically crafted building height limitations.

This comment is unclear but presumably means that the County should allow height variations to increase density. Please see response to **Letter E2, Sierra Club, Response 11**. The proposed Area Plan's

land use designations do not specify height limitations or variations, because County staff feels that this issue is more appropriately addressed through the County's Zoning Ordinance, and the proposed Area Plan's land use designations specify that development standards (such as height limits) are determined by the underlying zoning designation. In any case, the proposed Area Plan contains policies that would promote design standards regarding building height. Representative policies that were included in Section 3.1, Land Use, and/or Section 3.6, Aesthetics, of the Revised Draft EIR are provided below:

Policy LU 3.4.5: Ensure compatibility between single family and multiple family residential developments through consideration of building height and massing, architectural treatment, connectivity, privacy, and other design considerations.

Policy CO 6.6.4: Where appropriate, require new development to be sensitive to scenic viewpoints or viewsheds through building design, site layout and building heights.

Policy C 3.3.4: Within transit-oriented development projects, provide incentives such as higher floor area ratio and/or lower parking requirements for commercial development that provides transit and ride-share programs.

Policy LU 5.2.1: Designate higher density residential uses in areas served by public transit and full range of support services.

Policy C 1.2.1: Develop coordinated plans for land use, circulation and transit to promote transit-oriented development that concentrates higher density housing, employment, and commercial areas in proximity to transit corridors.

As evidenced by the above policies, the proposed Area Plan includes policies that would promote compatible building heights and flexibility for building heights in transit-oriented districts, and thus accounts for the comment's recommendation. Therefore, the proposed Area Plan does not require the adoption of any additional measures to address this comment.

Response 24

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Rewarding density through bonus programs.

The proposed Area Plan contains policies that would promote higher density development. Representative policies that were included in Section 3.1, Land Use, Section 3.2, Transportation and

Circulation, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.2.14: Evaluate development fee schedules on an ongoing basis to determine fee incentives to attract development. [This policy was not specifically listed in the above-referenced sections of the Revised Draft EIR but is included in the proposed Area Plan.]

Policy LU 3.1.3: Promote opportunities for live-work units to accommodate residents with home-based businesses.

Policy LU 3.1.7: Promote development of housing for students attending local colleges, in consideration of access to campuses to the extent practicable.

Policy LU 4.3.5: Support efforts by the City of Santa Clarita to coordinate with property owners and environmental agencies, and provide assistance as appropriate, to promote clean-up and redevelopment of the Whittaker Bermite property as a business and employment center.

Policy LU 5.2.1: Designate higher-density residential uses in areas served by public transit and a full range of support services.

Policy C 1.2.6: Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.

Policy C 4.1.6: Provide incentives to promote transit-oriented development near rail stations.

Policy C 5.4.2: Evaluate the feasibility of establishing a joint City/County transit impact fee to equitably distribute the capital costs of transit system expansion to meet the needs of new development in both County and City areas of the Valley.

Policy C 5.4.3: Seek funding for transit system expansion and improvement from all available sources, including local, state, and federal programs and grants.

Moreover, the Los Angeles County Code contains a density bonus ordinance, adopted in 2006, which is set forth in Title 22 (Planning and Zoning), Part 17 (Density Bonuses and Affordable Housing Incentives), Sections 22.52.1800 through 22.52.1880. The purpose of the program is to “implement state density bonus requirements, as set forth in section 65915 of the California Government Code, as amended, and to increase the production of affordable housing and senior citizen housing that is intended to compliment

the communities in which they are located.” (L.A. County Code, Section 22.52.1800.)²⁰ Density bonuses exceeding the requirements of state law are available for certain projects. (L.A. County Code, Section 22.52.1840.B) In light of the existing density bonus ordinance and the inclusion in the proposed Area Plan of policies to promote higher density, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 25

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Designing density guidelines for private and public spaces.

The comment’s recommendation is generic and it is difficult to ascertain the précised nature or scope of the recommendation. That said, the proposed Area Plan contains policies that address density guidelines for public and private spaces, which are listed in Section 3.1, Land Use, and/or Section 3.6, Aesthetics, of the Revised Draft EIR as provided below:

Policy LU 1.1.5: Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.

Policy LU 1.1.6: Preserve the rural lifestyle in canyons and low-density, outlying areas of the Santa Clarita Valley, through designating these areas as Rural Land on the Land Use Map where appropriate.

Policy LU 1.3.4: Encourage density transfers where appropriate to facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity, provided that urban densities (exceeding one dwelling unit per acre) are not permitted in rural areas.

Policy LU 1.3.5: Encourage flexible siting and design techniques within hillside areas in order to preserve steep slopes or other unique physical features, including density-controlled development (clustering) in accordance with the provisions of the Zoning Ordinance, provided that all residential lots meet the minimum lot size requirements of a Community Standards District, where applicable.

²⁰ For additional information on the County’s program, see <http://planning.lacounty.gov/faq/residential/>.

- Policy LU 3.4.4:** Within higher density housing developments, ensure provision of adequate recreational and open space amenities to ensure a high quality living environment.
- Policy C 1.2.1:** Develop coordinated plans for land use, circulation, and transit to promote transit-oriented development that concentrates higher density housing, employment, and commercial areas in proximity to transit corridors.
- Policy CO 3.2.4:** Protect biological resources in the designated Significant Ecological Areas (SEAs) through the siting and design of development which is highly compatible with the SEA resources. Specific development standards shall be identified to control the types of land use, density, building location and size, roadways and other infrastructure, landscape, drainage, and other elements to assure the protection of the critical and important plant and animal habitats of each SEA. In general, the principle shall be to minimize the intrusion and impacts of development in these areas with sufficient controls to adequately protect the resources. (Guiding Principle #10)
- Policy CO 10.2.5:** Where appropriate, allow density transfers and density-controlled development (clustering) in accordance with the provisions of the Zoning Ordinance to encourage retention of open space, provided that all residential lots meet the minimum lot size requirements of Community Standards District, where applicable.

As evidenced by the above policies, the proposed Area Plan includes policies that relate to density guidelines for public and private spaces and thus accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required to address this comment.

Response 26

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Incentivizing redevelopment of underutilized areas, such as surface parking lots.

The proposed Area Plan contains policies that would promote the redevelopment of underutilized areas. Representative policies that were included in Section 3.1, Land Use, Section 3.2, Transportation and

Circulation, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

- Policy LU 1.1.5:** Increase infill development and re-use of underutilized sites within and adjacent to developed urban areas to achieve maximum benefit from existing infrastructure and minimize loss of open space, through redesignation of vacant sites for higher density and mixed use, where appropriate.
- Policy LU 2.3.6:** Provide parking alternatives in mixed-use developments, including subterranean parking and structured parking to limit the amount of surface area devoted to vehicle storage.
- Policy LU 3.4.7:** Minimize the prominence of areas devoted to automobile parking and access in the design of residential neighborhoods.
- Policy C 1.2.6:** Provide flexible standards for parking and roadway design in transit-oriented development areas to promote transit use, where appropriate.
- Policy C 2.2.6:** Within residential neighborhoods, promote the design of “healthy streets” which may include reduced pavement width, shorter block length, provision of on-street parking, traffic-calming devices, bike routes and pedestrian connectivity, landscaped parkways, and canopy street trees.
- Policy C 3.3.1:** Evaluate parking standards and reduce requirements where appropriate, based on data showing that requirements are in excess of demand.
- Policy C 3.3.2:** In pedestrian-oriented, high density mixed use districts, provide for common parking facilities to serve the district, where appropriate.
- Policy C 3.3.3:** Promote shared use of parking facilities between businesses with complementary uses and hours, where feasible.
- Policy C 3.3.4:** Within transit-oriented development projects, provide incentives such as higher floor area ratio and/or lower parking requirements for commercial development that provides transit and ride-share programs.
- Policy C 3.3.5:** Encourage convenient short-term parking in high-activity areas, and all day parking at the periphery of the development areas.

Policy C 3.3.7: Create parking benefit districts which invest meter revenues in pedestrian infrastructure and other public amenities wherever feasible.

Policy C 3.3.8: Establish performance pricing of street parking so that the costs are enough to promote frequent turnover, with a goal to keep 15 percent of spaces empty at all times, whenever feasible.

As evidenced by the above policies, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 27

The comment recommends adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Enabling prototype structures in neighborhood center zones that can be adapted to new uses over time.

It is unclear what the comment means by "prototype structures" and how enabling such structures would reduce GHG emissions. Furthermore, the proposed Area Plan does not identify "neighborhood center zones." Thus no response can be provided.

Response 28

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from land use:

- Allowing mixed use in commercial districts.

First, as described in Section 2.0, Project Description, of the Revised Draft EIR, the proposed Area Plan's commercial land use designations would facilitate mixed-use development. For example, the General Commercial (CG) designation "provides for small neighborhood commercial districts that serve the short-term needs of residents in the immediate area." (Revised Draft EIR, p. 2.0-37.) Multi-family dwelling units, including live-work units, may be permitted in this designation, provided that the approval of the residential use does not adversely impact job creation or economic development. (Revised Draft EIR, p. 2.0-38.) Such units shall have a minimum density of 6 dwelling units per acre, and a maximum density of 18 dwelling units per acre. (Revised Draft EIR, p. 2.0-38.) Additionally, mixed-use developments may also be permitted in this designation at densities ranging from 6 to 18 dwelling units per acre and a maximum Floor Area Ratio (FAR) of 1.0 for commercial uses in the mixed-use area. (Revised Draft EIR, p. 2.0-38.)

As another example, the Major Commercial (CM) designation “identifies major commercial districts ... and is intended to promote the development of regional focal points for commercial, entertainment, and cultural uses serving the general public and drawing from a large market area.” (Revised Draft EIR, p. 2.0-38.) Multi-family dwelling units and mixed-use developments may also be permitted in this designation at densities ranging from 18 to 50 dwelling units per acre. (Revised Draft EIR, p. 2.0-38.) The commercial uses in any mixed-use developments shall have a maximum FAR of 2.0.

Second, the proposed Area Plan contains policies that would promote mixed-use developments in commercial districts. Representative policies that were included in Section 3.1, Land Use, Section 3.2, Transportation and Circulation, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 1.2.13: Encourage use of the specific plan process to plan for cohesive, vibrant, pedestrian-oriented communities with mixed uses, access to public transit, and opportunities for living and working within the same community.

Policy LU 2.3.5: Mixed-use developments shall be designed to create a pedestrian-scale environment through appropriate street and sidewalk widths, block lengths, relationship of buildings to streets, and use of public spaces.

Policy LU 5.2.4: Encourage transit-oriented development (TOD) through designation of land uses that allow compact, mixed-use development in proximity to rail stations and multi-modal transit facilities, in conformance with applicable policies.

Policy LU 5.2.5: Encourage the mix of compatible uses in areas where, though not served by rail or transit, mixed uses will achieve more walkable neighborhoods and trip reduction, in conformance with applicable policies.

Policy C 1.2.5: In mixed-use projects, require compact development and a mix of land uses to locate housing, workplaces, and services within walking distance or bicycling distance of each other.

As evidenced by the policies above, the proposed Area Plan includes numerous policies that would promote mixed-use developments and the proposed Area Plan explicitly allows mixed-use developments in commercial zones. Therefore, the proposed Area Plan accounts for the comment’s recommendation and no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 29

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring that all new public buildings meet a minimum LEED Silver standard.

In January 2007, the County's Board of Supervisors adopted the "Countywide Energy and Environmental Policy," which requires that all new County buildings over 10,000 square feet under the County capital Project Program achieve Leadership in Energy and Environmental Design (LEED) Silver certification.²¹

The proposed Area Plan contains policies that ensure compliance with the County's Green Building Program. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 8.1.3: Implement the ordinances developed through the County's Green Building Program.

Policy CO 8.2.1: Ensure that all new County buildings, and all major renovations and additions, meet adopted green building standards, with a goal of achieving the LEED (Leadership in Energy and Environmental Design) Silver rating or above, or equivalent where appropriate.

Policy CO 8.3.1: Evaluate development proposals for consistency with the ordinances developed through the County's Green Building Program.

Policy CO 8.3.2: Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County's Green Building Program.

In addition, Section 3.4 of the Revised Draft EIR requires development that would occur under the proposed Area Plan to comply with the following mitigation measure:

3.4-17 Fire stations and public libraries that contain more than 10,000 square feet of floor area within the OVOV planning area shall be designed and constructed so as to achieve LEED silver certification, in accordance with County policy.

²¹ For more information on this policy, please see http://green.lacounty.gov/green_buildings.asp and <http://file.lacounty.gov/bos/supdocs/29932.pdf>.

As evidenced by the above policies, the proposed Area Plan accounts for the recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 30

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring that new residential and commercial development, as well as major remodels of homes and businesses, meet green building standards and/or are LEED Certified.

First, the County's Green Building Program, and specifically the Green Building Ordinance, contains green building standards comparable to those recommended by the comment. (See L.A. County Code, Section 22.52.2130(C)-(D).) Specifically, the ordinance requires the following for any building permit application filed on or after January 1, 2010:

- Residential Projects (5 or more units): Green Point Rated (GPR), California Green Builder (CGB), or LEED certification;
- Non-Residential Projects (10,000 - 25,000 square feet): LEED certification; and
- Non-Residential (greater than 25,000 square feet or taller than 75 feet): LEED Silver certification.

(Ibid. at Section 22.52.2130(D).) Such projects also are required to comply with green building standards contained in the Green Building Ordinance relative to energy conservation, outdoor water conservation, indoor water conservation, resource conservation, and tree planting. (Ibid. at Section 22.52.2130(C).)

Second, the proposed Area Plan contains policies that would require new residential and commercial developments, as well as major renovations, to meet green building standards. Representative policies in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 1.5.1: Promote the use of environmentally responsible building design and efficiency standards in new development, and provide examples of these standards in public facilities, pursuant to the County's Green Building Program.

Policy CO 4.1.6: Support amendments to the County Building Code that would promote upgrades to water and energy efficiency when issuing permits for renovations or additions to existing buildings.

Policy CO 8.1.3: Implement the ordinances developed through the County's Green Building Program.

Policy CO 8.2.1: Ensure that all new County buildings, and all major renovations and additions, meet adopted green building standards, with a goal of achieving the LEED (Leadership in Energy and Environmental Design) Silver rating or above, or equivalent where appropriate.

Policy CO 8.3.1: Evaluate development proposals for consistency with the ordinances developed through the County's Green Building Program.

Policy CO 8.3.2: Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County's Green Building Program.

Policy CO 8.3.3: Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

As evidenced by the above policies, the proposed Area Plan contains policies that would require new residential and commercial developments, as well as major renovations, meet green building, water, and energy efficiency standards. Therefore, the proposed Area Plan does not require the adoption of any additional measures to address this comment.

Response 31

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring that all new buildings exceed Title 24 energy standards by 25 percent. See Town of Windsor Building and Housing Code Article 13, establishing green building standards and ratings for commercial and residential buildings.

First, the County's Green Building Program, and specifically the Green Building Ordinance, requires that "[a]ll projects ... be designed to consume at least fifteen (15) percent less energy than allowed under the 2005 Update to the California Energy Efficiency Standards." (L.A. County Code, Section 22.52.2130(C).) Moreover, the Town of Windsor adopted the 2010 iteration of Title 24 and does not require that new buildings exceed Title 24 standards. (See Windsor Code section 7-2-105.)

In addition, the Town of Windsor Housing Code Article 13 green building standard, specifically referenced in the comment, requires new commercial buildings to achieve a minimum of 20 credits on the Leadership in Energy and Environmental Design (LEED) rating system. New residential buildings are required to achieve a minimum of 50 points on the GreenPoint rating system. Remodels or reconstruction of 50 percent or more of the existing building are required to achieve a minimum of 25 points on the

GreenPoint rating system (*see* Town of Windsor, California, “Government,” <http://www.ci.windsor.ca.us/>).

However, each credit on the LEED rating system or point on the GreenPoint rating systems is not necessarily equivalent to a one percent improvement over the Title 24 energy standards – they are not the same. Typically, new buildings must achieve a minimum of 40 credits to obtain the LEED Certified standard and 50 credits to obtain the LEED Silver standard. New buildings must achieve a minimum of 50 points to obtain the GreenPoint Rated standard. (*See* U.S. Green Building Council, <http://www.usgbc.org/Default.aspx>; and Build It Green, “GreenPoint Rated New Home,” <http://www.builditgreen.org/greenpoint-rated-new-home/>.)

In any event, the proposed Area Plan contains policies that would require new residential and commercial developments, as well as major renovations, to meet specific green building standards and to exceed Title 24 requirements. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 8.1.3: Implement the ordinances developed through the County’s Green Building Program.

Policy CO 8.2.1: Ensure that all new County buildings, and all major renovations and additions, meet adopted green building standards, with a goal of achieving the LEED (Leadership in Energy and Environmental Design) Silver rating or above, or equivalent where appropriate.

Policy CO 8.3.1: Evaluate development proposals for consistency with the ordinances developed through the County’s Green Building Program.

Policy CO 8.3.2: Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County’s Green Building Program.

The proposed Area Plan is required to conform to the County of Los Angeles Green Building Standards. In accordance with the County of Los Angeles Green Building Standards, “all new County buildings (greater than 10,000 square feet) under the County’s Capital Project Program shall be Leadership in Energy & Environmental Design (LEED) Certified at the Silver Level” (*see* County of Los Angeles, “Green Buildings,” http://green.lacounty.gov/green_buildings.asp). In addition, the County of Los Angeles Green Building Standard requires that new projects meet the following green building standards listed in **Table 3, County of Los Angeles Green Building Standards for New Projects:**

Table 3
County of Los Angeles Green Building Standards for New Projects

Project Description	Building Permit Application Filed on or after January 1, 2009 and before January 1, 2010	Building Permit Application Filed on or After January 1, 2010
Residential projects containing < 5 dwelling units	County Green Building Standards	County Green Building Standards
Residential projects containing > 5 dwelling units	County Green Building Standards	County Green Building Standards and GreenPoint Rated or California Green Builder or LEED Certified
Hotels/motels, lodging houses, nonresidential and mixed-use building with a gross floor area of < 10,000 square feet	County Green Building Standards	County Green Building Standards
Hotels/motels, lodging houses, nonresidential and mixed-use buildings and first-time tenant improvements with a gross floor area of > 10,000 square feet and < 25,000 square feet	County Green Building Standards	County Green Building Standards and LEED Certified
Hotels/motels, lodging houses, non-residential and mixed-use buildings and first-time tenant improvements with a gross floor area of > 25,000 square feet	County Green Building Standards	County Green Building Standards and LEED Silver
New high-rise building > 75 feet in height	County Green Building Standards	County Green Building Standards and LEED Silver

Source: County of Los Angeles, "Green Buildings," http://green.lacounty.gov/green_buildings.asp. 2011.

The County Green Building Standards require that all projects consume at least 15 percent less energy than allowed under the 2005 Update to the California Energy Efficiency Standards. The standards also require projects include water and resource conservation measures (*see* County of Los Angeles, "Green Buildings," http://green.lacounty.gov/green_buildings.asp). Additional requirements must be met in order to achieve LEED Certification, LEED Silver, GreenPoint Rated, and/or California Green Builder standards. In sum, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 32

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring building projects to recycle or reuse a minimum of 50 percent of unused or leftover building materials.

Please see **Response 46**, below, for information responsive to this comment. As discussed in that response, existing County standards, including a construction demolition and debris recycling ordinance,

require that at least 50 percent of all such materials be recycled or reused. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 33

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Offering incentives to encourage green building standards and discourage business as usual construction.

The proposed Area Plan contains policies that would provide incentives that encourage developments to meet green building standards. Representative policies that were included in **Section 3.3, Air Quality**, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy C 3.3.4: Within transit-oriented development projects, provide incentives such as higher floor area ratio and/or lower parking requirements for commercial development that provides transit and ride-share programs.

Policy C 4.1.6: Provide incentives to promote transit-oriented development near rail stations.

Policy CO 1.5.1: Promote the use of environmentally responsible building design and efficiency standards in new development, and provide examples of these standards in public facilities, pursuant to the County's Green Building Program.

Policy CO 4.1.6: Support amendments to the County Building Code that would promote upgrades to water and energy efficiency when issuing permits for renovations or additions to existing buildings.

Policy CO 8.3.2: Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County's Green Building Program.

Policy CO 8.3.3: Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

Policy CO 8.3.10: Provide incentives and technical assistance for installation of energy-efficient improvements in existing and new buildings.

In addition, as discussed in **Response 3** and **Response 31**, the proposed Area Plan goes further than the comment. Instead of only providing incentives, the proposed Area Plan requires conformance to the

County of Los Angeles Green Building Standards, which explicitly require developments to meet specific green building standards. As evidenced by these policies, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 34

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Providing information, marketing, training, and education to support green building.

The proposed Area Plan already contains policies that would provide the community outreach efforts requested by the comment, examples of which are provided below:

Policy CO 1.3.3: Provide informational material to the public about programs to conserve non-renewable resources and recover materials from the waste stream.

Policy CO 4.1.4: Provide informational materials to applicants and contractors on the Castaic Lake Water Agency's Landscape Education Programs, and/or other information on xeriscape, native California plants, and water-conserving irrigation techniques as materials become available.

Policy CO 8.1.4: Provide information and education to the public about energy conservation and local strategies to address climate change.

Policy CO 8.1.5: Coordinate various activities within the community and appropriate agencies related to GHG emissions reduction activities.

Policy CO 8.4.7: Provide information to the public on recycling opportunities and facilities, and support various locations and events to promote public participation in recycling.

As evidenced by the above policies, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 35

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring energy efficiency and water conservation upgrades to existing residential and non-residential buildings at the time of sale, remodel, or additions. Berkeley's Residential Energy Conservation Ordinance (RECO) is an example of such a measure. Berkeley's RECO, Berkeley Municipal Code Chapter 19.16.

The California Air Resource Board's (CARB) December 2008 Scoping Plan for implementation of Assembly Bill 32 (AB 32) acknowledged the need to secure emission reductions from the existing building stock inventory. For example, in dealing with energy efficiency improvements, the Scoping Plan contemplates voluntary and mandatory whole-building retrofits for existing buildings, and innovative financing to overcome first-cost and split incentives for energy efficiency, on-site renewable energy generation, and high efficiency distributed generation.²² The Scoping Plan also addresses the development of a green building program for new *and* existing buildings.²³

Based on the Scoping Plan, CARB is looking to achieve emission reductions from the green building sector in the amount of 26 million metric tons (MMT).²⁴ This reduction total equates to 15 percent of California's 2020 greenhouse gas emission reduction target of 169 MMT.²⁵ The reduction strategies contemplated by CARB to secure the 26 MMT reduction are listed below:

- Implementation of the 2010 California Green Building Standards Code (CalGreen) -- to result in a 2.9 MMT reduction;
- Implementation of local agency "beyond code" green building ordinances that require exceedance of minimum state standards - to result in a 3.6 MMT reduction; and
- Retrofit of existing state, school, residential and commercial buildings - to result in a 20 MMT reduction.²⁶

As evidenced by the reduction strategies outlined above, CARB presently plans to attribute a significant proportion of the emission reductions needed from the green building sector to the retrofit of existing buildings. Because CARB is seeking to secure 20 MMT of the total 26 MMT from the retrofit of existing buildings, CARB believes that existing development can and should feasibly participate in the program.²⁷ In addition to the development of new retrofit programs, CARB has identified several

²² CARB, Scoping Plan (December 2008), p. 42.

²³ *Ibid.* at pp. 57-59.

²⁴ See CARB, California Green Building Strategy webpage, available at <http://www.arb.ca.gov/cc/greenbuildings/greenbuildings.htm>.

²⁵ *Ibid.*

²⁶ *Ibid.*

²⁷ See CARB, Existing Building Retrofits webpage, available at <http://www.arb.ca.gov/cc/greenbuildings/retrofits.htm> (last visited September 24, 2010) ["These older buildings offer a large and cost effective opportunity to reduce energy use, cost, pollution and greenhouse gas emissions."].

programs, including programs sponsored by the California Public Utilities Commission and California Energy Commission, which currently are in place to promote energy efficiency retrofits in existing buildings.²⁸

It is not atypical for homeowners to invest funds and seek incentives to facilitate retrofits that improve efficiency and ultimately result in cost savings. For example, Flex Your Power, which is described as California's statewide energy efficiency marketing and outreach campaign, is a partnership amongst California's utilities, residents, businesses, institutions, government agencies and nonprofit organizations working together to save energy. The campaign maintains an active website that, among others, allows homeowners to locate available rebates and incentives on a zip code basis.²⁹ Also, the County, in conjunction with local cities, Southern California Edison and Southern California Gas Company, sponsors an Energy Upgrade California program, which helps County homeowners make home upgrades to reduce energy use, conserve resources and create more comfortable and efficient homes. Participating homeowners may be eligible for up to \$4,500 in rebates and incentives.³⁰

In any event, the proposed Area Plan also contains policies that would promote measures that would support energy efficiency and water conservation upgrades to existing residential and non-residential buildings at the time of sale, remodel, or additions. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 4.1.6: Support amendments to the County Building Code that would promote upgrades to water and energy efficiency when issuing permits for renovations or additions to existing buildings.

Policy CO 8.1.3: Implement the ordinances developed through the County's Green Building Program.

Policy CO 8.2.1: Ensure that all new County buildings, and all major renovations and additions, meet adopted green building standards, with a goal of achieving the LEED (Leadership in Energy and Environmental Design) Silver rating or above, or equivalent where appropriate.

²⁸ *Ibid.*

²⁹ See Flex Your Power, Residential Rebates, Incentives & Services webpage, available at <http://www.fypower.org/res/tools/rgl.html>

³⁰ For more information on the County's Energy Upgrade California program, please see <http://www.lacountyenergyprogram.org/Content/10000/AbouttheProgram.html>.

Policy CO 8.3.1: Evaluate development proposals for consistency with the ordinances developed through the County's Green Building Program.

Policy CO 8.3.2: Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County's Green Building Program.

Policy CO 8.3.3: Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

As evidenced by the above policies, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 36

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring new residential construction to meet specific energy efficiency standards that go beyond those mandated by California law.

As discussed in previous responses (see e.g., **Responses 3, 30 and 31**), the proposed Area Plan contains policies that would require new residential developments meet specific green building standards to go beyond those mandated by California law relative to energy, water conservation, solid waste diversion, and resource conservation. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 8.1.3: Implement the ordinances developed through the County's Green Building Program.

Policy CO 8.2.1: Ensure that all new County buildings, and all major renovations and additions, meet adopted green building standards, with a goal of achieving the LEED (Leadership in Energy and Environmental Design) Silver rating or above, or equivalent where appropriate.

Policy CO 8.3.1: Evaluate development proposals for consistency with the ordinances developed through the County's Green Building Program.

Policy CO 8.3.2: Promote construction of energy efficient buildings through the certification requirements of the ordinances developed through the County's Green Building Program.

The proposed Area Plan is required to conform to the County of Los Angeles Green Building Standards. In accordance with the County of Los Angeles Green Building Standards, "all new County buildings (greater than 10,000 square feet) under the County's Capital Project Program shall be Leadership in Energy & Environmental Design (LEED) Certified at the Silver Level" (see County of Los Angeles, "Green Buildings," http://green.lacounty.gov/green_buildings.asp). In addition, the County of Los Angeles Green Building Standard requires that new projects meet specific green building standards (see **Response D91-31, Table 2**).

The County Green Building Standards require that all projects consume at least 15 percent less energy than allowed under the 2005 Update to the California Energy Efficiency Standards. The standards also require projects include water and resource conservation measures (see County of Los Angeles, "Green Buildings," http://green.lacounty.gov/green_buildings.asp). Additional energy efficiency, water conservation, and waste reduction requirements must be met in order to achieve LEED Certification, LEED Silver, GreenPoint Rated, and/or California Green Builder standards. Because the proposed Area Plan requires consistency with the provisions of the County of Los Angeles Green Building Standards, and because the standards require energy efficiency, water conservation, and waste reduction requirements beyond those mandated by state law, the proposed Area Plan does not require the adoption of any additional measures to address this comment.

Response 37

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring that all new buildings be constructed to allow for future installation of solar energy systems. In its Community Greenhouse Gas Reduction Plan, the City of Arcata recommended that it adopt such requirements.

The proposed Area Plan contains policies that would promote the use of solar energy systems. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 7.1.2: Promote the use of solar panels and renewable energy sources in all projects.

Policy CO 8.2.3: Support purchase of renewable energy for public buildings, which may include installing solar photovoltaic systems to generate electricity for County buildings

and operations and other methods as deemed appropriate and feasible, in concert with significant energy conservation efforts.

Policy CO 8.2.5: Support installation of photovoltaic and other renewable energy equipment on public facilities, in concert with significant energy conservation efforts.

Policy CO 8.2.6: Promote use of solar lighting in parks and along paseos and trails, where practical.

Policy CO 8.3.4: Encourage new residential development to include on-site solar photovoltaic systems, or pre-wiring, in at least 50% of the residential units, in concert with other significant energy conservation efforts.

Policy CO 8.3.5: Encourage on-site solar generation of electricity in new retail and office commercial buildings and associated parking lots, carports, and garages, in concert with other significant energy conservation efforts.

Policy CO 8.3.6: Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials.

In addition, Section 3.4 of the Revised Draft EIR requires development that would occur under the proposed Area Plan to comply with the following mitigation measures:

3.4-7 Prior to the issuance of building permits, the applicant shall provide evidence of the ability to install solar, and solar hot water heaters, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://www.gosolarcalifornia.org/builders/index.html>; see also the California Public Utility Commission's website for solar water heating incentives at <http://www.cpuc.ca.gov/puc/energy/solar/swh.htm>). For discretionary projects, this evidence on solar issues shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-16 Consistent with the Governor's Million Solar Roofs Plan, the project applicant or designee, acting as the seller of any single-family residence constructed as part of the

development of at least 50 homes that are intended or offered for sale, shall offer a solar energy system option to all customers that enter negotiations to purchase a new production home constructed within the OVOV planning area on land for which an application for a tentative subdivision map has been deemed complete. The seller shall disclose the total installed cost of the solar energy system option, and the estimated cost savings.

As evidenced by the above policies and mitigation measures, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 38

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Adopting and implementing a Heat Island Mitigation Plan that requires new residential buildings to have 'cool roofs' with high or highest-commercially available solar reflectance and thermal emittance characteristics. Research shows that 'cool roofs' can reduce air conditioning energy use between 10 and 50 percent. Akbari 2000. Concomitantly, the City can adopt a program of building permit enforcement for re-roofing to ensure compliance with existing state building code 'cool-roof' requirements for non-residential buildings.

The proposed Area Plan contains policies that would promote and require the use of "green roofs" and/or "cool roofs." Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 4.3.4: Encourage and promote the use of new materials and technology for improved stormwater management, such as pervious paving, green roofs, rain gardens, and vegetated swales.

Policy CO 8.2.9: Reduce heat islands through installation of trees to shade parking lots and hardscapes, and use of light-colored reflective paving and roofing surfaces.

Policy CO 8.3.6: Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials.

In addition, Section 3.4 of the Revised Draft EIR requires development that would occur under the proposed Area Plan to comply with the following mitigation measure:

- 3.4-4** Prior to the issuance of building permits, the applicant shall provide evidence of light colored “cool” roofs and cool pavements, in accordance with the requirements of the ordinances adopted pursuant to the County’s Green Building Program and other applicable State and County standards. (See Consumer Energy Center, Cool Roofs for discretionary projects, this evidence on cool roofs and pavements shall be provided to and considered by the Regional Planning Commission or Hearing officer concurrent with the planning and environmental review process for the applicant’s proposed project. For discretionary projects, this evidence on cool roofs and pavements shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant’s proposed project.

As evidenced by the above policies and mitigation measure, the proposed Area Plan accounts for the comment’s recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 39

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Integrating renewable energy requirements into development and building standards, such as requiring on-site solar generation of electricity in new retail or commercial buildings and parking lots and garages (solar carports).

The proposed Area Plan contains policies that would promote the use of solar energy systems. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

- Policy LU 7.1.2:** Promote the use of solar panels and renewable energy sources in all projects.
- Policy CO 8.2.3:** Support purchase of renewable energy for public buildings, which may include installing solar photovoltaic systems to generate electricity for County buildings and operations and other methods as deemed appropriate and feasible, in concert with significant energy conservation efforts.

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- Policy CO 8.2.5:** Support installation of photovoltaic and other renewable energy equipment on public facilities, in concert with significant energy conservation efforts.
- Policy CO 8.2.6:** Promote use of solar lighting in parks and along paseos and trails, where practical.
- Policy CO 8.3.4:** Encourage new residential development to include on-site solar photovoltaic systems, or pre-wiring, in at least 50% of the residential units, in concert with other significant energy conservation efforts.
- Policy CO 8.3.5:** Encourage on-site solar generation of electricity in new retail and office commercial buildings and associated parking lots, carports, and garages, in concert with other significant energy conservation efforts.
- Policy CO 8.3.6:** Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials.

In addition, Section 3.4 of the Revised Draft EIR requires development that would occur under the proposed Area Plan to comply with the following mitigation measures:

- 3.4-7** Prior to the issuance of building permits, the applicant shall provide evidence of the ability to install solar, and solar hot water heaters, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://www.gosolarcalifornia.org/builders/index.html>; see also the California Public Utility Commission's website for solar water heating incentives at <http://www.cpuc.ca.gov/puc/energy/solar/swh.htm> For discretionary projects, this evidence on solar issues shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.
- 3.4-16** Consistent with the Governor's Million Solar Roofs Plan, the project applicant or designee, acting as the seller of any single-family residence constructed as part of the development of at least 50 homes that are intended or offered for sale, shall offer a solar energy system option to all customers that enter negotiations to purchase a new production home constructed within the OVOV planning area on land for which an

application for a tentative subdivision map has been deemed complete. The seller shall disclose the total installed cost of the solar energy system option, and the estimated cost savings.

As evidenced by the above policies and mitigation measures, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or the Revised Draft EIR are required.

Response 40

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Adopting a resolution or ordinance that will require sources of renewable energy, such as installing solar photovoltaic systems to generate electricity for public buildings and operations, using methane to generate electricity, at wastewater treatment plants, and installing combined heat and power systems.

The proposed Area Plan contains policies that would promote the use of solar energy systems. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 7.1.2: Promote the use of solar panels and renewable energy sources in all projects.

Policy CO 1.3.4 Promote and encourage cogeneration projects for commercial and industrial facilities, provided they meet all applicable environmental quality standards, including those related to air and noise, and provide a net reduction in greenhouse gas (GHG) emissions associated with energy production.

Policy CO 8.2.3: Support purchase of renewable energy for public buildings, which may include installing solar photovoltaic systems to generate electricity for County buildings and operations and other methods as deemed appropriate and feasible, in concert with significant energy conservation efforts.

Policy CO 8.2.5: Support installation of photovoltaic and other renewable energy equipment on public facilities, in concert with significant energy conservation efforts.

Policy CO 8.2.6: Promote use of solar lighting in parks and along paseos and trails, where practical.

Policy CO 8.3.4: Encourage new residential development to include on-site solar photovoltaic systems, or pre-wiring, in at least 50% of the residential units, in concert with other significant energy conservation efforts.

Policy CO 8.3.5: Encourage on-site solar generation of electricity in new retail and office commercial buildings and associated parking lots, carports, and garages, in concert with other significant energy conservation efforts.

Policy CO 8.3.6: Require new development to use passive solar heating and cooling techniques in building design and construction, which may include but are not be limited to building orientation, clerestory windows, skylights, placement and type of windows, overhangs to shade doors and windows, and use of light colored roofs, shade trees, and paving materials.

In addition, Section 3.4 of the Revised Draft EIR requires development that would occur under the proposed Area Plan to comply with the following mitigation measures:

3.4-7 Prior to the issuance of building permits, the applicant shall provide evidence of the ability to install solar, and solar hot water heaters, in accordance with the requirements of the ordinances adopted pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://www.gosolarcalifornia.org/builders/index.html>; see also the California Public Utility Commission's website for solar water heating incentives at <http://www.cpuc.ca.gov/puc/energy/solar/swh.htm> For discretionary projects, this evidence on solar issues shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

3.4-16 Consistent with the Governor's Million Solar Roofs Plan, the project applicant or designee, acting as the seller of any single-family residence constructed as part of the development of at least 50 homes that are intended or offered for sale, shall offer a solar energy system option to all customers that enter negotiations to purchase a new production home constructed within the OVOV planning area on land for which an application for a tentative subdivision map has been deemed complete. The seller shall disclose the total installed cost of the solar energy system option, and the estimated cost savings.

Also of note, various renewable energy incentives are available to County residents.³¹ For example:

- The California Solar Initiative provides a state-sponsored rebate program available to residential and non-residential development for solar and photovoltaic solar, including solar water heating.
- The Southern California Gas Company offers The Home Energy Upgrade Financing program to its residential customers. Customers can qualify for loans ranging from \$2,500 to \$20,000 to purchase and install energy-efficient upgrades. Eligible technologies include: Water heaters, refrigerated air conditioners, evaporative coolers, double-paned windows, building and equipment insulation, roofing, spa/pool heaters, insulated plantation shutters, and permanently installed natural gas barbecues.

A federal personal tax credit is in place for the residential sector relative to solar water heat, photovoltaic solar, wind, fuel cells, geothermal heat pumps, and other solar electric technologies. As evidenced by the above policies, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or the Revised Draft EIR are required.

Response 41

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Requiring new residential developments to participate in the California Energy Commission's New Solar Homes Partnership and include on-site solar photovoltaic systems in at least 50 percent of residential units. See <http://www.gosolarcalifornia.ca.gov/nshp/index.html>; see also California Public Utilities Commission, New Solar Homes Partnership Guidebook, Second Edition (July 2007).

The proposed Area Plan contains a policy that would promote the use of solar energy systems in residential land uses consistent with the recommended measure above. The policy, which was included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR, is provided below:

Policy CO 8.3.4: Encourage new residential development to include on-site solar photovoltaic systems, or pre-wiring, in at least 50% of the residential units, in concert with other significant energy conservation efforts.

The proposed Area Plan does not include a policy that requires residential developments to participate in the California Energy Commission's New Solar Homes Partnership. Therefore, the following mitigation measure has been added to **Section 3.4** in the Revised Final EIR:

³¹ For more information, see DSIRE: Database of State Incentives for Renewables & Efficiency, <http://www.dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=CA>.

3.4-18 The project applicant or designee, shall require new residential developments to participate in the California Energy Commission's New Solar Homes Partnership and include the option for on-site solar photovoltaic systems in at least 50% of residential units.

The two mitigation measures identified in **Response 40**, above are also relevant.

Response 42

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Using Geographical Information Systems (GIS) to map and assess local renewable resources, the electric and gas transmission and distribution system, community growth areas anticipated to require new energy services, and other data useful to the deployment of renewable technologies.

As a preface, the comment is confusing and ambiguous. That said, the Revised Draft EIR presents mapping information for development that would occur under the proposed Area Plan. Section 3.1, Land Use, of the Revised Draft EIR contains information and maps that show the locations of the proposed land use designations within the unincorporated Santa Clarita Valley, which is the area covered by the proposed Area Plan. With respect to the electric and gas distribution system, Section 3.17, Utilities and Infrastructure, page 3.17-37 of the Revised Draft EIR states the following:

“[T]he OVOV Planning Area is a critical utility corridor for water, electricity, natural gas, and petroleum products. However, these major utility corridors have served to constrain development in the OVOV Planning Area, as a host of private properties have either utility easements, utility right-of-way restrictions, or are located in proximity to a major utility corridor. In addition to the utility corridors, various utility companies also own properties within the County's Planning Area that often remain vacant, thus reducing the total amount of developable property in the County's Planning Area.”

The electric and gas distribution systems, however, are not subject to the development standards of the proposed Area Plan because the County's land use authority over such utilities is limited. Moreover, the County has undertaken many GIS efforts to map renewable resources, such as the County Solar Map, which is available on the Internet at <http://solarmap.lacounty.gov/>, and the Natural Resources Map in the April 2011 draft of the proposed Countywide General Plan, which maps wind resources and is available on the Internet at http://planning.lacounty.gov/assets/upl/project/gp_2035_FIG_6-6_natural_resource_areas.pdf.

Response 43

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Identifying possible sites for production of local renewable energy sources such as solar, wind, small hydro, biogas, and tidal; evaluating potential land use, environmental, economic, and other constraints affecting their development; and adopting measures to protect those resources, such as utility easement, rights-of-way, and land set-asides.

As indicated in **Response 42**, above, the County has undertaken many GIS efforts to map renewable resources. Furthermore, the proposed Antelope Valley Area Plan provides a policy framework for utility-scale renewable energy facilities in the unincorporated Antelope Valley (where the development of such facilities is focused) and is available on the Internet at <http://planning.lacounty.gov/tnc>. That said, for purposes of the proposed Area Plan, the County is not acting as a local energy provider, but as a land use regulatory authority.

Also, with respect to the electric and gas distribution system, Section 3.17, Utilities and Infrastructure, of the Revised Draft EIR states:

“[T]he OVOV Planning Area is a critical utility corridor for water, electricity, natural gas, and petroleum products. However, these major utility corridors have served to constrain development in the OVOV Planning Area, as a host of private properties have either utility easements, utility right-of-way restrictions, or are located in proximity to a major utility corridor. In addition to the utility corridors, various utility companies also own properties within the County’s Planning Area that often remain vacant, thus reducing the total amount of developable property in the County’s Planning Area.” (Revised Draft EIR, p. 3.17-37.)

In other words, based on information presented in the Revised Draft EIR, adequate utility easements and rights-of-way already have been preserved. Moreover, it is not the County’s role to mediate real estate transactions between private landowners and public utilities for easements or rights-of-way. Nonetheless, the proposed Area Plan contains policies that would promote the use of renewable energy systems for those resources that fall under the jurisdiction and development standards of the proposed Area Plan, as set forth in **Response 40**, above. Therefore, the proposed Area Plan does not require the adoption of any additional measures to address this comment.

Response 44

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions by reducing energy consumption:

- Providing information, marketing, training, and education to support renewable resource use.

The proposed Area Plan contains policies that would provide information on renewable resource use. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy CO 1.2.1: Improve the community's understanding of renewable resource systems that occur naturally in the Santa Clarita Valley, including systems related to hydrology, energy, ecosystems, and habitats, and the interrelationships between these systems, through the following measures:

- c. Provide information to decision-makers about the interrelationship between traffic and air quality, ecosystems and water quality, land use patterns and public health, and other similar interrelationships between renewable resource systems in order to ensure that decisions are based on an understanding of these concepts.

Policy CO 8.1.4: Provide information and education to the public about energy conservation and local strategies to address climate change.

Policy CO 8.1.5: Coordinate various activities within the community and appropriate agencies related to GHG emissions reduction activities.

As evidenced by the above policies, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 45

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions through waste emission reduction:

- Implementing an environmentally preferred purchasing program which could include giving bid preferences to contractors and suppliers that meet established sustainability criteria.

To preface, the issue of solid waste is discussed at length in Section 3.17, Utilities and Infrastructure, of the Revised Draft EIR. As discussed in Section 3.17, because nearby landfills are approaching full capacity and a capacity shortfall is likely to exist by 2021, impacts from buildout of the proposed Area Plan to the solid waste system are expected to be significant and unavoidable even with mitigation. (Revised Draft EIR, p. 3.17-2.)

In addition, the proposed Area Plan contains policies that would give preference to vendors and contractors that meet environmentally preferred purchasing policies. Representative policies that were

included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy C 3.2.1: Adopt clean vehicle purchase policies for City and County fleets.

Policy CO 8.2.8: Promote the purchase of energy-efficient and recycled products, and vendors and contractors who use energy-efficient vehicles and products, consistent with adopted purchasing policies.

Also, in 1990, the County was among the very first jurisdictions to implement a comprehensive green procurement policy in the region. This policy was broadened in 1994 to require all County agencies to purchase recycled products whenever they meet the County's requirements, and the overall costs are less than or equal to those of non-recycled products.³²

In 2007, the County's Purchasing Division issued a policy statement (P-1050: Purchase of Environmentally Preferable Products (Green Purchasing); effective June 14, 2007)³³ with the following purchasing objectives:

- Conserve natural resources;
- Minimize environmental impacts such as pollution and use of water and energy;
- Eliminate or reduce toxics that create hazards to workers and our community;
- Support strong recycling markets;
- Reduce materials that are put into landfills;
- Increase the use and availability of environmentally preferable products that protect the environment;
- Encourage manufacturers and vendors to reduce environmental impacts in their production and distribution systems; and,
- Create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

The Purchasing Division also directed that the following preferences be implemented when evaluating potential purchases and/or during the award process: (1) products that are durable, long lasting, reusable

³² For more information on the County's procurement policy, please see <http://dpw.lacounty.gov/epd/awards/procurement.cfm>.

³³ For more information on Policy P-1050, please see http://green.lacounty.gov/env_preferable_purch.asp.

or refillable will be preferred whenever feasible; (2) wherever possible, suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be requested to take back equipment for reuse or environmentally safe recycling when the County discards or replaces such equipment; and (3) all suppliers shall be required, where applicable, to use and recycle packaging material used for product delivery. Also of note, the County's Internal Services Department Contracting Division evaluates proposers' green initiatives during the solicitation process.³⁴

As evidenced by the above policies and the County's existing practices, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 46

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions through waste emission reduction:

- Establishing a program and system for reuse or recycling of construction and demolition materials for government and non-governmental construction projects.

First, in January 2005, the County's Board of Supervisors adopted a Construction and Demolition Debris Recycling and Reuse Ordinance. (See L.A. County Code, Section 20.87.010 et seq.) This ordinance requires projects located in unincorporated County areas to recycle or reuse 50 percent of the debris generated. (Ibid. at Section 20.87.040; see also Revised Draft EIR, p. 3.17-25.)

Second, the County's Green Building Program, and specifically the Green Building Ordinance, requires that projects comply with the following resource conservation measures:

- A minimum of 50 percent of non-hazardous construction and demolition debris by weight from all residential projects containing less than five dwelling units regardless of gross floor area, or from hotels/motels, lodging houses, non-residential, and mixed-use buildings with a gross floor area of less than 10,000 square feet shall be recycled and/or salvaged for reuse.
- A minimum of 65 percent of non-hazardous construction and demolition debris by weight from all residential projects containing at least five dwelling units regardless of gross floor area, or from hotels/motels, lodging houses, non-residential, and mixed-use buildings with a gross floor area of at least 10,000 square feet shall be recycled and/or salvaged for reuse.

(See L.A. County Code, Section 22.52.2130.)

³⁴ See <http://green.lacounty.gov/contracting.asp>.

Third, Section 3.4, Global Climate Change, of the Revised Draft EIR requires development that would occur under the proposed Area Plan to comply with the following mitigation measure:

3.4-10 Prior to the issuance of building permits, the applicant or their contractor shall submit a site construction management plan for the reuse and recycle construction and demolition waste (including soil, vegetation, concrete, lumber, metal, and cardboard) to the Department of Public Works for review and approval in accordance with the requirements of the ordinances developed pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://www.ciwmb.ca.gov/condemo/>).

Fourth, the proposed Area Plan contains policies that promote the recycling of construction and demolition debris, an example of which is provided below:

Policy CO 8.4.4: Promote commercial and industrial recycling, including recycling of construction and demolition debris.

As evidenced by the above discussion, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 47

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions through waste emission reduction:

- Requiring recycling in all government buildings and public schools.

First, the Environmental Programs Division of the County's Department of Public Works has been developing and implementing recycling programs within County facilities for several years. The Division has purchased 8,000 desk-side paper recycling bins for distribution to County employees in buildings that are enrolled in the existing paper recycling program. The desk-side bins emphasize individual recycling and segregation of white paper from other recyclable paper. The Division also has purchased and distributed beverage container recycling bins to County departments.³⁵

Second, the proposed Area Plan contains policies that would promote and require recycling. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

³⁵ For more information on the Division's efforts, please see <http://green.lacounty.gov/waste.asp>.

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- Policy LU 7.5.1:** Ensure that all new development provides adequate space for recycling receptacles and bins on site.
- Policy LU 7.5.2:** Promote the use of recycled building materials.
- Policy CO 1.3.1:** Explore, evaluate, and implement methods to shift from using non-renewable resources to use of renewable resources in all aspects of land use planning and development.
- Policy CO 1.3.2:** Promote reducing, reusing, and recycling in all Land Use designations and cycles of development.
- Policy CO 8.2.11:** Implement recycling in all public buildings, parks, and public facilities, including for special events.
- Policy CO 8.4.1:** Encourage and promote the location of enclosed materials recovery facilities (MRF) within the Santa Clarita Valley.
- Policy CO 8.4.2:** Adopt mandatory residential recycling programs for all residential units, including single-family and multi-family dwellings.
- Policy CO 8.4.3:** Allow and encourage composting of greenwaste, where appropriate.
- Policy CO 8.4.4:** Promote commercial and industrial recycling, including recycling of construction and demolition debris.
- Policy CO 8.4.5:** Develop and implement standards for refuse and recycling receptacles and enclosures to accommodate recycling in all development.
- Policy CO 8.4.6:** Introduce and assist with the placement of receptacles for recyclable products in public places, including at special events.
- Policy CO 8.4.7:** Provide information to the public on recycling opportunities and facilities, and support various locations and events to promote public participation in recycling.
- Policy CO 8.4.8:** Take an active role in promoting, incubating, and encouraging businesses that would qualify under the Recycling Market Development Zone program or equivalent, including those that manufacture products made from recycled products, salvage, and resource recovery business parks.

Third, Section 3.4 of the Revised Draft EIR also contains the following mitigation measure as modified (shown by underlining), which would facilitate recycling:

3.4-11 Prior to the issuance of building permits, the applicant shall provide evidence of reuse and recycling receptacles in residential, industrial, and commercial projects, in accordance with the requirements of the ordinances developed pursuant to the County's Green Building Program and other applicable State and County standards. (See <http://zerowaste.ca.gov>; see also <http://www.ca-ilg.org/wastereduction>.) For discretionary projects, this evidence on recycling receptacles shall be provided to and considered by the Regional Planning Commission or Hearing Officer concurrent with the planning and environmental review process for the applicant's proposed project.

As evidenced by the above discussion, the proposed Area Plan and existing County practices account for the comment's recommendation. Therefore, except as modified, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 48

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions through waste emission reduction:

- Implementing an organics and yard debris collection and composting program.

The proposed Area Plan contains policies that would promote and allow for recycling and composting of greenwaste. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are listed in **Response 47** and provided below:

Policy CO 2.1.3: Promote soil enhancement and waste reduction through composting, where appropriate.

Policy CO 8.4.3: Allow and encourage composting of greenwaste, where appropriate.

Additionally, Section 3.17 of the Revised Draft EIR contains the following mitigation measures:

3.17-1 The County of Los Angeles shall follow state regulations in implementing the goals, policies, and programs identified in the Los Angeles County Integrated Waste Management Plan in order to achieve and maintain a minimum of 50 percent reduction in solid waste disposal through source reduction, reuse, recycling, and composting.

3.17-3 The County shall require all development projects to coordinate with appropriate County agencies to ensure that there is adequate waste disposal capacity to meet the waste

disposal requirements of the County's Planning Area, and the County shall recommend that all development projects incorporate measures to promote waste reduction, reuse, recycling, and composting.

(See also Revised Draft EIR, p. 3.17-18 [noting that the County's Department of Public Works provides home composting demonstrations]; see also http://dpw.lacounty.gov/epd/sg/wk_scheds.cfm [providing information on the County's composting workshops].)

As evidenced by the above policies and mitigation measures, the proposed Area Plan accounts for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 49

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions through waste emission reduction:

- Adopting policies, economic incentives, and rate structures for garbage so that recycling, reusing, and composting becomes cheaper than incinerating waste or sending it to a landfill.

The proposed Area Plan contains policies that would promote and require recycling, including composting of greenwaste. Representative policies that were included in Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are listed in **Response 47**. Also, a consolidated list of these policies are set forth on pages 3.17–27 to 3.17-28 of the Revised Draft EIR. See also **Responses 45, 46 and 48** above. That being said, landfill operations and the economic policies of landfill operators are beyond the purview and jurisdiction of the proposed Area Plan. Therefore, the County is unable to adopt economic incentives and rate structures as requested by the comment, which would make certain solid waste disposal options more economically desirable than others. Nonetheless, as discussed, the proposed Area Plan contains numerous policies that would be recycling accessible and convenient for land uses that would developed under the proposed Area Plan.

Response 50

The comment recommends adoption of the following measure to reduce greenhouse gas (GHG) emissions from water consumption:

- Requiring new construction or users to offset demand so that there is no net increase in demand. *[This comment refers to water consumption.]*

To preface, the issue of water supply is discussed at length in Section 3.13, Water Service, of the Revised Draft EIR. Based on the information presented in Section 3.13, an adequate supply of water would be

available to serve the portion of the planning area within the Castaic Lake Water Agency's (CLWA) service area boundary and East Subbasin; as such, impacts would be less than significant. However, in areas outside CLWA's service area and the East Subbasin, local groundwater supplies may not be adequate to meet the needs of all existing residents due to the apparent over-reliance on groundwater deposits. Consequently, local supplies would not be able to meet the needs in this area and impacts would be significant after mitigation. (Revised Draft EIR, p. 3.13-1.)

As to the proposed Area Plan, it contains policies that would promote water conservation. Representative policies that were set forth in Section 3.13, Water Service, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 4.5.2: Encourage the provision of usable open space that is accessible to employees and visitors, and discourage the provision of large areas of water-consuming landscaping that are not usable or accessible.

Policy LU 4.5.3: Promote the inclusion of state-of-the-art technology within business complexes for telecommunications, heating and cooling, water and energy conservation, and other similar design features.

Policy LU 7.3.2: Maintain stormwater runoff on site by directing drainage into rain gardens, natural landscaped swales, rain barrels, permeable areas, and use of drainage areas as design elements, where feasible and reasonable.

Policy LU 7.4.1: Require the use of drought tolerant landscaping, native California plant materials, and evapotranspiration (smart) irrigation systems.

Policy LU 7.4.2: Require the use of low-flow fixtures in all non-residential development and residential development with five or more dwelling units, which many include but are not limited to water conserving shower heads, toilets, waterless urinals and motion-sensor faucets, and encourage use of such fixtures in building retrofits as appropriate.

Policy CO 1.1.1: In making land use decisions, consider the complex, dynamic, and interrelated ways that natural and human systems interact, such as the interactions between energy demand, water demand, air and water quality, and waste management.

Policy CO 1.2.1: Improve the community's understanding of renewable resource systems that occur naturally in the Santa Clarita Valley, including systems related to

hydrology, energy, ecosystems, and habitats, and the interrelationships between these systems, through the following measures:

- c. provide information to decision-makers about the interrelationship between traffic and air quality, ecosystems and water quality, land use patterns and public health, and other similar interrelationships between renewable resource systems in order to ensure that decisions are based on an understanding of these concepts.

Policy CO 4.1.1: In coordination with applicable water suppliers, adopt and implement a water conservation strategy for public and private development.

Policy CO 4.1.2: Provide examples of water conservation in landscaping through use of low water use landscaping in public spaces such as parks, landscaped medians and parkways, plazas, and around public buildings.

Policy CO 4.1.3: Require low water use landscaping in new residential subdivisions and other private development projects, including a reduction in the amount of turf-grass.

Policy CO 4.1.4: Provide informational materials to applicants and contractors on Castaic Lake Water Agency's Landscape Education Program, and/or other information on xeriscape, native California plants, and water-conserving irrigation techniques as materials become available.

Policy CO 4.1.5: Promote the use of low-flow and/or waterless plumbing fixtures and appliances in all new non-residential development and residential development of five or more dwelling units.

Policy CO 4.1.6: Support amendments to the County Building Code that would promote upgrades to water and energy efficiency when issuing permits for renovations or additions to existing buildings.

Policy CO 4.1.7: Apply water conservation policies to all pending development projects, including approved tentative subdivision maps, to the extent permitted by law; where precluded from adding requirements by vested entitlements, encourage water conservation in construction and landscape design.

Policy CO 4.1.8: Upon the availability of non-potable water services, discourage and consider restrictions on the use of potable water for washing outdoor surfaces.

- Policy CO 4.2.1:** In cooperation with the Sanitation District and other affected agencies, expand opportunities for use of recycled water for the purposes of landscape maintenance, construction, water recharge, and other uses as appropriate.
- Policy CO 4.2.2:** Require new development to provide the infrastructure needed for delivery of recycled water to the property for use in irrigation, even if the recycled water main delivery lines have not yet reached the site, where deemed appropriate by the reviewing authority.
- Policy CO 4.2.3:** Promote the installation of rainwater capture and gray water systems in new development for irrigation, where feasible and practicable.
- Policy CO 4.2.5:** Participate and cooperate with other agencies to complete, adopt, and implement an Integrated Regional Water Management Plan to build a diversified portfolio of water supply, water quality, and resource stewardship priorities for the Santa Clarita Valley.
- Policy CO 8.3.3:** Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

Moreover, from a policy perspective, the County believes that the water purveyors should dictate whether development within the County needs to be “water neutral.” To date, and based on current and projected supply and demand levels, water neutrality is not required by the water purveyors. That being said, any development facilitated by the proposed Area Plan would be subject to aggressive water conservation measures implemented, or to be implemented, by the County and the wholesale and retail water purveyors in the Santa Clarita Valley. Relevant examples of the water conservation efforts of the County and water purveyors are summarized below.

In addition, the County has already adopted water conservation and water waste prevention requirements. See Los Angeles County Code, Health & Safety, sections 11.38-620 through 11.38.680. Violation of these requirements is subject to a written warning for the first violation and is punishable by a fine of \$100 for each subsequent violation. In addition, as part of its Green Building Program, the County established Low Impact Development (LID) Standards to manage rainfall and stormwater runoff. See Los Angeles County Code, Environmental Protection, sections 12.84.410 through 12.84.460. One purpose of the LID standards is to respect and preserve the County’s water supplies by ensuring adequate groundwater recharge. LID applies to large and small projects.

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

From a broader perspective, the California Urban Water Conservation Council (CUWCC) was created in 1991 to increase efficient water use statewide through partnerships with urban water agencies, public interest organizations, and private entities. The CUWCC's goal is to integrate urban water conservation Best Management Practices (BMPs) into the planning and management of California's water resources. The CUWCC entered into an important Memorandum of Understanding (MOU) with nearly 100 urban water agencies and environmental groups in December 1991. Since then, the CUWCC has grown to 389 members. Those signing the MOU pledged to develop and implement 14 comprehensive water conservation BMPs.

These BMPs are intended to reduce California's long-term urban water demands. While the BMPs are currently implemented by the MOU signatories on a voluntary basis, they are specified as part of the Demand Management Measures section of the Urban Water Management Planning Act. Water conservation can achieve a number of goals, such as: (a) Meeting legal mandates; (b) Reducing average annual potable water demands; (c) Reducing sewer flows; (d) Reducing demands during peak seasons; (e) Meeting drought restrictions; and (f) Reducing carbon footprint, wastewater flows, and urban runoff.

According to the 2009 Santa Clarita Valley Water Report, CLWA signed the MOU in 2001 on behalf of its wholesale service area, and pledged to implement several BMPs at a wholesale support level (listed below). Newhall County Water District (NCWD) signed the MOU in 2002 and Valencia Water Company signed the MOU in 2006, both on behalf of their respective retail service areas. As separate MOU signatories and in their respective roles as retailers, NCWD and Valencia Water Company are committed to implementing all BMPs that are feasible and applicable in their service areas. Efforts are made to coordinate with CLWA and the other retail purveyors wherever possible to maximize efficiency and ensure the cost effectiveness of NCWD's and Valencia Water Company's conservation program.

In coordination with the retail purveyors, CLWA has been implementing the following BMPs (which pertain to wholesalers) for several years (some prior to signing the MOU in 2001): (a) BMP 3: System Water Audits, Leak Detection and Repair; (b) BMP 7: Public Information Programs; (c) BMP 8: School Education Programs; (d) BMP 10: Wholesale Agency Programs; and (e) BMP 12: Water Conservation Coordinator.

Since 2001, CLWA has also instituted implementation of BMP 2 (Residential Plumbing Retrofits) and BMP 14 (Residential Ultra Low Flush Toilet (ULFT) and High Efficiency Toilet (HET) Replacement Programs) on behalf of the retail purveyors.

According to the 2009 Santa Clarita Valley Water Report, NCWD, Santa Clarita Water Division of CLWA (SCWD), and Valencia Water Company have initiated implementation of the remaining BMPs that are

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

specific to retail water suppliers: (a) BMP 1: Water survey programs for single-family residential and multi-family residential customers; (b) BMP 2: Residential plumbing retrofits (including Weather Based Irrigation Controllers); (c) BMP 3: System water audits, leak detection and repair; (d) BMP 4: Metering with commodity rates for all new connections and retrofit of existing connections; (e) BMP 5: Large landscape conservation programs and incentives; (f) BMP 6: High-efficiency clothes washing machine financial incentive programs; (g) BMP 7: Public Information Programs; (h) BMP 8: School Education Programs; (i) BMP 9: Conservation programs for commercial, industrial, and institutional (CII) accounts; (j) BMP 11: Conservation pricing; (k) BMP 12: Conservation coordinator; (l) BMP 13: Water waste prohibition; and (m) BMP 14: Residential HET Replacement Program.

Reports to the CUWCC on BMP implementation by CLWA and the retail purveyors were included in the 2005 Urban Water Management Plan (UWMP), and have been reported annually to the CUWCC since 2007. Additional savings are occurring valley-wide due to state interior plumbing code requirements that have been in effect since 1992, as well as due to changes in lot size and reduction in exterior square footage of new housing and commercial developments.

According to the 2009 Santa Clarita Valley Water Report, CLWA and the retail water purveyors also entered into an MOU in 2007 to prepare a "Santa Clarita Valley Water Use Efficiency Strategic Plan" (Strategic Plan). The purpose of the Strategic Plan is to prepare a comprehensive long-term conservation plan for the Santa Clarita Valley by adopting objectives, policies, and programs designed to promote proven and cost-effective conservation practices. The Strategic Plan provides a detailed study of existing residential and commercial water use and recommends programs designed to reduce the overall valley-wide water demand by 10 percent by 2030. The programs are designed to provide Valley residents with the tools and education to use water more efficiently. The six programs identified in the Strategic Plan are: (a) HET Rebate Program; (b) CII Audits and Customized Incentive Program; (c) Large Landscape Audits and Customized Incentive Program; (d) Landscape Contractor Certification and Weather-Based Irrigation Controller Program; (e) High Efficiency Washer Rebate Program; and (f) Public Information and Education Programs.

In addition, the Strategic Plan identifies other key factors that will help reduce the valley's overall water demand. The Strategic Plan also includes an appendix with more aggressive water use efficiency measures designed to meet a potential 20 percent reduction in water use by 2020. This includes funding more active conservation programs, retrofit on resale legislation, water rate reform, water budget-based rates, and a more aggressive recycled water program. Implementation of the majority of the programs identified in the Strategic Plan are beginning in 2010 through funding by CLWA on behalf of all the retail purveyors.

Also of note, in 2008, Governor Schwarzenegger issued a proclamation for all Californians to reduce their per capita water consumption by 20 percent by the year 2020. In November 2009, the Governor and Legislature reached a historic agreement over ensuring long-term water supply reliability for California, as well as restoring and protecting the Sacramento-San Joaquin Delta and other ecologically sensitive areas. The agreement is comprised of four policy bills and an \$11.4 billion bond measure. One of the policy bills (SB 7X7) identifies reporting criteria and guidelines for water utilities to track and measure progress toward achieving the 20 percent per capita demand reduction goal. Water utilities are required to implement strategies and report progress in their UWMPs.

In summary, County, regional, and state-wide water conservation measures are in place, or will be in place, to ensure that development facilitated by the proposed Area Plan is required to implement all applicable water conservation BMPs and other water conservation measures.

As evidenced by the above discussion, the proposed Area Plan and existing water conservation efforts account for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 51

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from water consumption:

- Using reclaimed water for landscape irrigation in new developments and on public property and installing the infrastructure to deliver and use reclaimed water.

The proposed Area Plan contains policies that would promote the use of reclaimed or recycled water. Representative policies that were included in Section 3.13, Water Service, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 7.3.2: Maintain stormwater runoff on site by directing drainage into rain gardens, natural landscaped swales, rain barrels, permeable areas, and use of drainage areas as design elements, where feasible and reasonable.

Policy CO 4.2.1: In cooperation with the Sanitation District and other affected agencies, expand opportunities for use of recycled water for the purposes of landscape maintenance, construction, water recharge, and other uses as appropriate.

Policy CO 4.2.2: Require new development to provide the infrastructure needed for delivery of recycled water to the property for use in irrigation, even if the recycled water

main delivery lines have not yet reached the site, where deemed appropriate by the reviewing authority.

Policy CO 4.2.3: Promote the installation of rainwater capture and gray water systems in new development for irrigation, where feasible and practicable.

Moreover, note that water reclamation plants (WRPs) already are producing reclaimed water in the County's jurisdictional areas. Specifically, the Sanitation Districts of Los Angeles County own and operate two WRPs in the Santa Clarita Valley: the Saugus WRP (No. 26) and the Valencia WRP (No. 32). Both WRPs discharge reclaimed water to the Santa Clara River, and provide reclaimed water for non-potable uses (e.g., landscape irrigation). The County reasonably expects that additional WRPs will be proposed and constructed over time. For example, the approved Newhall Ranch Specific Plan includes construction of an additional WRP.

As evidenced by the above policies and discussion, the proposed Area Plan and existing water conservation efforts account for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 52

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from water consumption:

- Requiring buildings to be water-efficient and mandating water-efficient fixtures and appliances in all new development and government buildings.

First, the County's existing Green Building Program mandates water efficiency in all new development. Specifically, the Green Building Ordinance requires:

- A smart irrigation controller be installed for any area of a lot that is landscaped or designated for future landscaping;
- All landscaped areas meet the drought-tolerant requirements set forth in Part 21 of Chapter 22.52 (see **Response 53**); and,
- All tank-type toilets installed in residential projects containing five or more dwelling units regardless of gross floor area, or in hotels/motels, lodging houses, non-residential, and mixed-use buildings with a gross floor area of at least 10,000 square feet be high-efficiency toilets (maximum of 1.28 gallons per flush).

(L.A. County Code, Section 22.52.2130.)

Second, the proposed Area Plan contains policies that would require buildings to be water-efficient and to use water-efficient fixtures and appliances. Representative policies that were included in Section 3.13, Water Service, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 4.5.3: Promote the inclusion of state-of-the-art technology within business complexes for telecommunications, heating and cooling, water and energy conservation, and other similar design features.

Policy LU 7.4.2: Require the use of low-flow fixtures in all non-residential development and residential development with five or more dwelling units, which many include but are not limited to water conserving shower heads, toilets, waterless urinals and motion-sensor faucets, and encourage use of such fixtures in building retrofits as appropriate.

Policy CO 4.1.1: In coordination with applicable water suppliers, adopt and implement a water conservation strategy for public and private development.

Policy CO 4.1.5: Promote the use of low-flow and/or waterless plumbing fixtures and appliances in all new non-residential development and residential development of five or more dwelling units.

Policy CO 4.1.6: Support amendments to the County Building Code that would promote upgrades to water and energy efficiency when issuing permits for renovations or additions to existing buildings.

Policy CO 4.1.7: Apply water conservation policies to all pending development projects, including approved tentative subdivision maps, to the extent permitted by law; where precluded from adding requirements by vested entitlements, encourage water conservation in construction and landscape design.

Policy CO 4.1.8: Upon the availability of non-potable water services, discourage and consider restrictions on the use of potable water for washing outdoor surfaces.

Policy CO 4.2.3: Promote the installation of rainwater capture and gray water systems in new development for irrigation, where feasible and practicable.

Policy CO 8.3.3: Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

(Please also see **Response 50** for a comprehensive discussion of water conservation efforts on a region-wide basis).

As evidenced above, the proposed Area Plan and the County's Green Building Program account for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 53

The comment recommends the adoption of the following measure to reduce greenhouse gas (GHG) emissions from water consumption:

- Requiring site-appropriate, drought-tolerant low water use, native landscaping and ultra-efficient irrigation systems where appropriate for all development applications and re-landscaping projects and limiting the amount of water intensive landscaping to reduce the amount of water needed for irrigation.

First, the County's existing Green Building Program addresses water use associated with landscaping and irrigation systems. Specifically, the Green Building Ordinance requires:

- A smart irrigation controller be installed for any area of a lot that is landscaped or designated for future landscaping; and,
- All landscaped areas meet the drought-tolerant requirements set forth in Part 21 of Chapter 22.52 (see discussion of the Drought-Tolerant Landscaping Ordinance immediately below).

(L.A. County Code, Section 22.52.2130). Additionally, the Drought-Tolerant Landscaping Ordinance requires:

- A minimum of 75 percent of the total landscaped area on a lot/parcel contain plants from the drought-tolerant plant list;
- A maximum of 25 percent of the total landscaped area on a lot/parcel can consist of turf; however, in no event shall turf be planted in strips that are less than 5 feet wide, and in no event shall the total landscaped area contain more than 5,000 square feet of turf;
- All turf shall be water-efficient, as defined by the County's green building technical manual; and,
- Plants in the total landscaped area must be grouped in hydrozones, in accordance with their respective water, cultural and maintenance requirements.

(L.A. County Code, Section 22.52.2230; see also *Ibid.* at Section 12.84.410 et seq. [setting forth the County's Low Impact Development Ordinance, which assists in the replenishment of groundwater supplies].)

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

In addition to the County's current practices, the proposed Area Plan contains policies that would require site-appropriate, drought-tolerant low water use, native landscaping and ultra-efficient irrigation systems for development that would occur under the proposed Area Plan. Representative policies that were included in Section 3.13, Water Service, Section 3.3, Air Quality, and/or Section 3.4, Global Climate Change, of the Revised Draft EIR are provided below:

Policy LU 4.5.2: Encourage the provision of usable open space that is accessible to employees and visitors, and discourage the provision of large areas of water-consuming landscaping that are not usable or accessible.

Policy LU 7.3.2: Maintain stormwater runoff on site by directing drainage into rain gardens, natural landscaped swales, rain barrels, permeable areas, and use of drainage areas as design elements, where feasible and reasonable.

Policy LU 7.4.1: Require the use of drought tolerant landscaping, native California plan materials, and evapotranspiration (smart) irrigation systems.

Policy CO 4.1.1: In coordination with applicable water suppliers, adopt and implement a water conservation strategy for public and private development.

Policy CO 4.1.2: Provide examples of water conservation in landscaping through use of low water use landscaping in public spaces such as parks, landscaped medians and parkways, plazas, and around public buildings.

Policy CO 4.1.3: Require low water use landscaping in new residential subdivisions and other private development projects, including a reduction in the amount of turf-grass.

Policy CO 4.1.4: Provide informational materials to applicants and contractors on Castaic Lake Water Agency's Landscape Education Program, and/or other information on xeriscape, native California plants, and water-conserving irrigation techniques as materials become available.

Policy CO 4.1.7: Apply water conservation policies to all pending development projects, including approved tentative subdivision maps, to the extent permitted by law; where precluded from adding requirements by vested entitlements, encourage water conservation in construction and landscape design.

- Policy CO 4.2.1:** In cooperation with the Sanitation District and other affected agencies, expand opportunities for use of recycled water for the purposes of landscape maintenance, construction, water recharge, and other uses as appropriate.
- Policy CO 4.2.2:** Require new development to provide the infrastructure needed for delivery of recycled water to the property for use in irrigation, even if the recycled water main delivery lines have not yet reached the site, where deemed appropriate by the reviewing authority.
- Policy CO 4.2.3:** Promote the installation of rainwater capture and gray water systems in new development for irrigation, where feasible and practicable.
- Policy CO 8.3.3:** Promote energy efficiency and water conservation upgrades to existing non-residential buildings at the time of major remodel or additions.

The proposed Area Plan requires developments to be consistent with the County of Los Angeles Drought Tolerant Landscaping Ordinance referenced above. (Please also see **Response 50** for a comprehensive discussion of water conservation efforts on a region-wide basis).

As evidenced above, the proposed Area Plan and the County's Green Building Program account for the comment's recommendation. Therefore, no changes to the proposed Area Plan or Revised Draft EIR are required.

Response 54

Referencing guidance issued by the BAAQMD, the comment states that a fair share mitigation fee can be imposed by the County on new development to fund greenhouse gas (GHG) emission reduction measures identified in the Climate Action Plan. The comment further states that this fee can allow projects to achieve carbon neutrality to address emissions that cannot be feasibly reduced on site and that the Bay Area Air Quality Management District has developed guidance for this program.

From a policy perspective, given the current economic climate, the County is reluctant to enact or impose another layer of regulatory fees on development proposed within its jurisdiction. Many jurisdictions are lowering and/or waiving development fees to stimulate economic growth. That being said, as noted in **Response 16**, the County will give further consideration to the feasibility of carbon fees when preparing its Countywide Climate Action Plan, which will address all of the County's unincorporated areas, including those within the Santa Clarita Valley. To comply with all constitutional standards, which require that mitigation measures be substantiated by an "essential nexus" and be "roughly proportional"

to the impacts, preparation of a detailed financial study will be required before any such fee can be imposed. (See *State CEQA Guidelines* Section 15126.4(a)(4).)

Response 55

The comment states that the Revised Draft EIR fails to consider a “wide-range of alternatives” and requested that the County consider a City-centered alternative that maximizes infill opportunities and avoids sprawl development on the urban fringe. The comment observes that such an alternative could incorporate a revenue sharing agreement between the County and the City of Santa Clarita.

To preface, CEQA does not mandate that the County consider a “wide-range” of alternatives. Rather, *State CEQA Guidelines* Section 15126.6(a) states that EIRs “shall describe a range of reasonable alternatives.” Section 6.0, Alternatives, of the Revised Draft EIR did consider a reasonable range of three alternatives that were specifically devised in light of the proposed Area Plan’s identified significant and unavoidable impacts. (See Revised Draft EIR, p. 6.0-2; see also pp. 6.0-7 to 6.0-8 [describing Alternative 1 - No Project/Existing SCV Area Plan]; p. 6.0-21 [describing Alternative 2 - Preservation Corridor Alternative]; and p. 6.0-32 [describing Alternative 3 - Transit Corridor/Increased Employment Opportunity Alternative]).

As for the comment’s request to consider a “city-centered alternative,” it is important to emphasize that the proposed Area Plan, for purposes of the County, is defined by the County’s (not the City’s) jurisdictional areas. That is, the County’s Board of Supervisors will consider whether to adopt land use designations and policies, contained in the proposed Area Plan, for the County’s jurisdictional areas. The County cannot consider the alternative recommended by the comment because the County has no regulatory purview over the geographic area required for implementation of such an alternative. As stated in the Draft EIR, Section 6.0, Alternatives: When addressing feasibility, the *State CEQA Guidelines* Section 15126.6 states that

“[a]mong the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the applicant can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).”

The regulatory limitations in this case are the legal governmental boundaries of the City of Santa Clarita and the County of Los Angeles. *State CEQA Guidelines* Section 15126 (f)(3) states that an EIR need not consider an alternative that the effect of which cannot be reasonably ascertained and whose implementation is remote and speculative. To aspire to assume land use jurisdiction for another agency is highly remote and speculative.

The comment also suggested a revenue sharing agreement between the City and County in exchange for the County giving the City control over City-centered development. The commenter's suggestion regarding revenue agreements presently occur when land is annexed from the County by the City. The County reasonably expects that such revenue tax-sharing agreements would continue to be used for future annexations as they are processed.

Response 56

The comment states that the County must consider alternatives that incorporate strict energy and water conservation measures, require green building practices, and place mixed use development near alternative transportation nodes. Section 6.0, Alternatives, of the Revised Draft EIR, page 6.0-32 addressed the commenter's suggestion for a mixed use development near alternative transportation nodes. As described therein:

This alternative would create a mixed use transit corridor around Lang Station, a former train depot that could be restored as a Metrolink station. High density residential land use designations located next to a major transportation/transit corridor would support policies in Los Angeles County's adopted Housing Element and the vision created in the OVOV planning process. The types of development recommended for this area would be designed at an urban density and have a mix of commercial uses. The proposed Area Plan's land use designations within the boundaries of the Transit Corridor (Alternative 3) are Residential 2 (H2) and Rural Land 10 (RL10). There are 107 acres within the H2 designation, with a maximum allowable density of 2 dwelling units per acre, which would allow for a total of 215 dwelling units. There are 701 acres within the RL2 designation, with a maximum density of 1 dwelling unit per 10 acres, which would allow for a total of 70 dwelling units. Alternative 3 would change these land use designations to Residential 30 (H30) and Industrial Office (IO).

Under Alternative 3, 5,412 acres within the boundaries of the Transit Corridor would be designated as H30, with a maximum allowable density of 30 dwelling units per acre, which would allow for a total of 16,251 dwelling units, and 267 acres within the boundaries of the Transit Corridor would be designated as IO, which would allow for a business/office park (see Figure 6.0-2, Transit Corridor/Increased Employment Opportunity Alternative). This would create an employment center near the medium to high density multi-family housing within the Transit Corridor and give residents an opportunity to work and live in the Santa Clarita Valley.

Also, all of the green building practices and energy and water conservation measures already addressed in the proposed Area Plan would be applicable to this alternative.

As illustrated in Table 6.0-4, Alternatives Analysis Comparison Summary, this Alternative 3 would result in impacts comparable to the proposed Area Plan in five environmental issue areas, greater impacts in one area and lesser impacts in 21 areas.

As evidenced by the above discussion, the Revised Draft EIR already accounts for the comment's recommendation and no change to the Revised Draft EIR is required.

Response 57

The comment states that the Revised Draft EIR has improperly rejected the environmentally superior alternative (i.e., Alternative 2 - Preservation Corridor Alternative), and failed to adequately explain why that alternative is inconsistent with the proposed Area Plan's objective of achieving a mix of land uses.

As explained in the Revised Draft EIR, Alternative 2 is superior to the proposed Area Plan from an environmental perspective. (Revised Draft EIR, p. 6.0-44.) However, Section 6.0 further found that Alternative 2 does not satisfy all of the project objectives. (Revised Draft EIR, pp. 6.0-31 and 6.0-44.) "For example, because this alternative would result in a reduced population and a decrease in the number of housing units, it would be less effective at achieving goals 14, 17, and 29 when compared to the proposed [Area Plan]." (Revised Draft EIR p. 6.0-44.) Therefore, contrary to the comment, the Revised Draft EIR provided an adequate basis for rejecting Alternative 2 from further consideration.

For background purposes, Alternative 2 would result in less buildable area than the proposed Area Plan: "[A] total of 597 dwelling units would be allowed on the 5,967.5 acres within the boundary of the proposed Preservation Corridor under Alternative 2, instead of a total of 2,761 dwelling units under the proposed Area Plan." (Revised Draft EIR, p. 6.0-21.) In other words, Alternative 2 would provide 2,164 fewer dwelling units than the proposed Area Plan and accommodate 7,055 less residents than the proposed Area Plan. (Revised Draft EIR, p. 6.0-31.) This difference is not inconsequential given the County's need to accommodate long-term growth projections within its jurisdictional areas. (See **Response 8**, above, for additional information on those growth projections.)

As indicated above, this overall reduction in total dwelling units and resident population is inconsistent with the following objectives of the proposed Area Plan:

14. Valley communities shall contain a mix of uses that support the basic needs of residents—places to live, shop, recreate, meet/socialize, and enjoy the environmental setting—that are appropriate and consistent with their community character. Regionally oriented uses that serve residents of the entire Valley or export goods and services may be concentrated in key business centers rather than uniformly dispersed throughout the Valley communities.
17. The Valley is committed to providing affordable work force housing to meet the needs of individuals employed in the Santa Clarita Valley.
29. Public infrastructure shall be improved, maintained, and expanded as needed to meet the needs of projected population and employment growth and contribute to the Valley's quality of life.

(Revised Draft EIR, pp. 2.0-10 to -12.)

Response 58

The comment states that CEQA mandates that the Revised Draft EIR be redrafted and recirculated in light of the prior comments. CEQA's recirculation standards, however, have not been triggered.

More specifically, *State CEQA Guidelines* Section 15088.5, subdivision (a), provides:

"New information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. Significant new information' requiring recirculation including, for example, a disclosure showing that:

- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted to reduce the impact to a level of insignificance.
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.
- (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."

Section 15088.5, subdivision (b), further provides: "Recirculation is not required where the new information added to the EIR merely clarifies *or amplifies* or makes insignificant modifications to an adequate EIR." (Italics added.)

Here, the information provided in response to this comment letter does not result in the addition of "significant new information." Additionally, it cannot be reasonably asserted that the Revised Draft EIR was "so fundamentally and basically inadequate and conclusory" so as to preclude public review. Instead, as evidenced by the above responses, the analysis provided for global climate change in the Revised Draft EIR was thorough, reasonable, and adequate.

Response 59

The comment expresses appreciation for the County's consideration of its comments. In response, the County acknowledges the commenter's concerns, as identified in the comment letter, and its receipt of the reference materials enclosed with the comment letter, which will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan and Revised Draft EIR.

Response 60

The comment requests that the commenter be notified of any future action on the proposed Area Plan and Revised Draft EIR. The comment is noted, and the County will provide the requested notice. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.



Golden Oak Ranch

January 24, 2011

Mr. Mitch Glaser
Supervising Regional Planner
Los Angeles County Department of Regional Planning
320 W. Temple Street, Room 1352
Los Angeles, California 90012

Re: Comments on Revised Draft Environmental Impact Report for the Update to the Santa Clarita Valley Area Plan (One Valley One Vision Plan)

Dear Mr. Glaser:

Golden Oak Ranch Properties, a wholly-owned subsidiary of The Walt Disney Company, is the proud owner of Golden Oak Ranch, located at 19802 Placerita Canyon Road in unincorporated Los Angeles County. Since the 1950s, Golden Oak Ranch has been a successful filming ranch, used by numerous companies, including Disney, in the production of motion pictures, television shows, and commercials. As you are aware, on October 28, 2009, we submitted applications with Regional Planning for Disney | ABC Studios at The Ranch, a state-of-the-art motion picture studio on the westernmost 56 acres of the Ranch directly adjacent to State Route (SR) 14.

1

We have reviewed the Revised Draft Environmental Impact Report (R-DEIR) for the One Valley One Vision (OVOV) Plan. In general, we appreciate the County's efforts to strike a balance between the need to recognize and preserve the beauty of the Ranch and the economic benefits of allowing development on a small portion of the 890-acre Ranch directly adjacent to SR-14.

2

The revised OVOV Plan and the R-DEIR indicate the County will review completed applications filed prior to the effective date of the revised OVOV Plan for consistency with the current Santa Clarita Valley Area Plan. On May 4, 2010, Regional Planning deemed complete the applications for Disney | ABC Studios at The Ranch and is in the process of preparing an Environmental Impact Report for the project. While the proposed project on the Ranch should be reviewed for consistency with the current Santa Clarita Valley Area Plan, it also would be consistent with the revised OVOV Plan.

3

We understand the County intends to designate the 44.28-acre portion of the Ranch covered by proposed Vesting Tentative Tract Map No. 71216 as IO (Office and Professional) and zone this area C-M (Commercial Manufacturing). The proposed project on the Ranch would be consistent with this designation, which is intended to promote master-planned environments

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and allows offices, research and development, light assembly and fabrication, warehousing and distribution, and supportive commercial uses. (R-DEIR, p. 2.0-39.) The proposed project on the Ranch also is allowed in the C-M zone, which allows motion picture studios and indoor sets. (L.A. County Code, § 22.28.230.) We appreciate the County's decision to remove the building height limitation of 55 feet, which was in the prior draft of the OVOV Plan, and, instead, rely on a maximum Floor Area Ratio (FAR) of 2.0. (R-DEIR, p. 3.1-23.) This revision will allow the proposed soundstages at Disney | ABC Studios at The Ranch to be up to 60 feet in height.

4

The revised OVOV Plan and the R-DEIR designate the portion of the Ranch outside the proposed tract map area as RL-20 (Rural Land 20) and Open Space-National Forest (OS-NF). The RL-20 designation allows a maximum density of 1 dwelling unit per 20 acres and the OS-NF designation allows a maximum density of 1 dwelling unit per 5 acres. While the RL-20 designation may be appropriate for the hillsides surrounding the Ranch floor, the Ranch floor is relatively flat and does not face the same development constraints as the surrounding hillsides. Accordingly, the Ranch floor should be allowed greater density than RL-20 and we request a designation of RL-5 for the area of the Ranch floor outside of the proposed tract map area and the private in-holding within Angeles National Forest. This designation would be consistent with the OS-NF designation for the area of the Ranch floor within the Angeles National Forest.

5

We also have seen conflicting information regarding the specific location of proposed Significant Ecological Area (SEA) within the Ranch. It appears the County has removed much of the Ranch floor from the proposed SEA, excluding Placerita Creek and Heil Creek, but it is difficult to determine the portions of Heil Canyon that are proposed SEA. The SEA Map in the R-DEIR appears inconsistent with the land use maps in the revised OVOV Plan. For example, the former vineyard area on the Ranch north of Placerita Creek is not designated SEA on the land use maps in the revised OVOV Plan, but this area is included within the proposed SEA in the R-DEIR's SEA map. Indeed, the proposed SEA appears to cover the entire Ranch in the SEA Map in the R-DEIR. (R-DEIR, Figure 3.7-2 on p. 3.7-14.) Furthermore, the figure in the R-DEIR has the Ranch in the Santa Susana Mountains SEA (SEA 27) rather than the Santa Clara River SEA (SEA 20) as indicated in the OVOV Plan. We request the final SEA maps be consistent with the map used at the October 5, 2009 OVOV public hearing, which indicated the area of the Ranch designated SEA would be limited to the more than 600 acres of steep hillsides surrounding the Ranch floor, Placerita Creek and Heil Creek.

6

Finally, the Parks and Recreation section of the R-DEIR indicates an adopted public hiking trail exists through the Ranch floor, extending eastward from SR-14 to Placerita Canyon Road. Specifically, Figure 3.16-2 on page 3.16-16 indicates part of the Backbone Trail System runs along Placerita Creek through the Ranch. The Ranch is privately-owned and there has been no dedication of any portion of the Ranch to the public for a public trail. A public trail through the Ranch floor would be entirely inconsistent with the use of the Ranch for filming motion pictures, television shows and commercials. This filming use requires the security and privacy afforded by the Ranch. We request the County update the map as there are no public trails and cannot be public trails through the Ranch floor. [As you are likely aware, Disney and the County's Department of Parks and Recreation are developing plans for a public hiking trail on the Ranch in the hillside south of Placerita Canyon Road as part of Disney | ABC Studios at The Ranch.

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Thank you for considering these comments on the County's Draft EIR for the OVOV Plan. We welcome the chance to work with the County on these issues. If you have any questions, please do not hesitate to contact me at (818) 560-2001.

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Best regards,



Edward A. Chuchla
President

- cc: The Honorable Mike Antonovich, Los Angeles County Supervisor
- Mr. Edel Vizcarra, Planning Deputy to Supervisor Antonovich
- Ms. Rosalind Wayman, Field Deputy for Santa Clarita Valley to Supervisor Antonovich
- Deanna Detchemendy, Esq., The Walt Disney Company
- Kathleen O'Prey Truman, Esq., Truman & Elliott LLP

Letter No. D92

Letter from Golden Oak Ranch, January 24, 2011

Response 1

The comment provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 2

The County acknowledges the input and comment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 3

The comment provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 4

The comment provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 5

The comment raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 6

The requested correction to Figure 3.7-2 (on page 3.7-14) in Section 3.7, Biological Resources, of the Revised Draft EIR has been made. Please see the portion of the Revised Final EIR entitled, "Revised Draft EIR Pages," for the actual text revision.

Response 7

The comment states that there has never been any indication that a public trail was proposed to traverse the property. The commenter is misinterpreting the trails map. The trails map does not depict existing

trails that are open to the public. A disclaimer, similar to the one that County staff has applied to Exhibit CO-9 in the proposed Area Plan, will be applied to **Figure 3.16-2** in the Revised Final EIR to clarify trails access as follows: “DISCLAIMER: The Master Plan of Trails is not a map of existing trails that are open to public use. It is a policy map of proposed trail alignments that may be constructed in conjunction with future development proposals. The proposed trail alignments are not intended to be precise. The best and most feasible trail alignment will be determined when development proposals are submitted, further site-specific studies are conducted, and the trail connectivity needs of these development proposals are determined. When a precise trail alignment is determined in conjunction with a development proposal, a Plan Amendment will not be required if the precise trail alignment varies from the proposed trail alignment shown on the Master Plan of Trails.”

Response 8

The comment provides factual background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 9

The comment is noted. No further response is required given that the comment does not address or question the content of the Revised Draft EIR.

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SHERMAN L. STACEY
LISA A. WEINBERG*
REBECCA A. THOMPSON
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FAX TRANSMITTAL

TO: Mitch Glaser **FAX #:** (213) 626-0434

FROM: Fred Gaines, Esq. **DATE:** January 24, 2011

Number of pages including this cover page: 7

CLIENT/CASE NAME: One Valley One Vision Revised Draft Area Plan

MESSAGE: Attached please find correspondence of this date regarding the above-referenced matter.

This message is intended only for the use of the individual or entity to which it is addressed, and may contain information that is PRIVILEGED, CONFIDENTIAL and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone, and return the original to us by mail without making a copy. Thank you.

If there is a problem with transmission or if all pages are not received, please call Cameron Hardy or Tiffany Perry at (818) 933-0200 for retransmission.

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January 24, 2011

ORIGINAL SENT BY U.S. MAIL

VIA FACSIMILE (213) 626-0434

Mitch Glaser
Department of Regional Planning
Los Angeles County
320 West Temple Street
Los Angeles, CA 90012

Re: One Valley One Vision Revised Draft Area Plan
Comments on the Revised Draft Environmental Impact Report

Dear Mr. Glaser:

This letter is submitted on behalf of Gateway Ranch LLC ("Gateway") for the purpose of providing comments the Revised Draft Environmental Impact Report for the One Valley One Vision Revised Draft Area Plan (the "Plan"). As detailed below, the Draft Environmental Impact Report for the Plan (the "DEIR") is legally inadequate and must be substantially revised and recirculated. In addition, given the scope of the Plan, and the substantial public controversy surrounding the Plan, public hearings should be held for the review of the further revised recirculated Draft and Final Environmental Impact Reports which may result.

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I.
INTRODUCTION.

Gateway is the owner of 302 acres of real property located in unincorporated Los Angeles County along the northeasterly side of I-5 and The Old Road between Calgrove Boulevard and the SR-14 Freeway to the east (the "Property"). The Property is commonly referred to as 23110 The Old Road, and is identified as Los Angeles County Assessor's Parcel Nos. 2827-028-005, -006, -007, -008, -019, -020 and 2827-029-004, -016. The Property is currently zoned A-2-1, and Gateway has applied for a Vesting Tentative Tract Map to create 124 single family residential lots (VTM 71279). The Property is currently primarily undeveloped, and consists of steep scrub and oak woodland habitat.

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However, it is located immediately adjacent to existing and proposed urban development, and has easy access to roadways, emergency services and utilities.

The tentative map layout is designed to create high-quality single family residential lots that are sensitive to the surrounding natural environment. The project's clustered land plan preserves prominent ridgelines and biological resources. The project minimizes development in habitat areas, major drainage tributaries, coastal scrub habitat and oak woodland habitat, and provides open space buffers to the existing and future residential development. Despite the many environmental and aesthetic benefits of Gateway's proposed project, it would not be permitted under the Plan.

2

This letter will summarize Gateway's objections to the DEIR. It should be noted that the arguments and evidence presented herein are in addition to any other arguments or evidence which the City has received or may receive from our client or their consultants at any or all public hearings on the DEIR and/or the Plan.

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II.
THE DEIR IS LEGALLY INADEQUATE AND CERTIFICATION WOULD CONSTITUTE PREJUDICIAL ERROR AND ABUSE OF DISCRETION.

The California Environmental Quality Act ("CEQA") requires a lead agency to certify a final Environmental Impact Report ("EIR") as complete and in compliance with CEQA, and to consider the information contained therein, before approving a project. See Public Resources Code §§ 21000 et seq.; State CEQA Guidelines ("Guidelines"), California Code of Regulations, Title 14, §15090. An adequate EIR must be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of the environmental consequences of the project being studied. See Guidelines § 15151. The EIR must include detail sufficient to enable those who did not participate in its preparation to understand and consider meaningfully the issues raised by the proposed project. See Laurel Heights Improvement Association v. Regents, 47 Cal. 3d 376, 405 (1988). Although CEQA does not mandate perfection, prejudicial abuse of discretion occurs if the failure to include relevant information in the EIR precludes informed decision making and informed public participation, thereby "thwarting the statutory goals of the EIR process." See Laurel Heights, supra, 47 Cal. 3d at 403-405. In short, CEQA requires an EIR to include a good faith effort at full disclosure. See Guidelines §15151.

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Achieving the CEQA purpose of preserving and enhancing the environment requires adequate disclosure of project information and active involvement of the public at each stage of the decision making process. Under CEQA, decisions regarding a proposed project cannot be made in a vacuum or under a veil of secrecy. Rather, they must be made under the watchful eye of the public so as to reassure "an apprehensive citizenry that the agency has, in fact, considered the ecological implications of its actions," No Oil, Inc. v. City of Los Angeles, 13 Cal. 3d 68, 86 (1974), and to

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affirmatively demonstrate that the environment is being protected. People ex rel. Department of Public Works v. Bosio, 47 Cal. App. 3d 495, 528 (1975).

As the foundation on which project decisions are made, the EIR is the "heart" of this public review process. See County of Inyo v. Yorty, 32 Cal. App. 3d 795, 810 (1973); Laurel Heights Improvement Association v. Regents ("Laurel Heights II"), 6 Cal. 4th 1112, 1123 (1993); Guidelines §15003(a). The EIR serves as an "environmental alarm bell" whose purpose it is to alert the public and its responsible officials to the environmental impacts associated with a proposed project. See County of Inyo, 32 Cal. App. 3d at 810. The public's ability to analyze and make comments on the adequacy of the EIR is therefore critical to insure all relevant information is considered before a decision with potentially significant and irreversible effects is made. See Laurel Heights, supra, 47 Cal. 3d at 392; Laurel Heights II, supra, 6 Cal. 4th at 1123; and Citizens of Goleta Valley v. Board of Supervisors, 52 Cal. 3d 553, 564 (1990).

4

The principles of public comment and informed decision making apply with full force to the DEIR for the Plan. However, as discussed below, both the Plan and the DEIR are seriously defective and, therefore, do not meet the requirements mandated by CEQA. The DEIR is so fundamentally flawed that CEQA's goal of meaningful public participation and informed decision making can only be achieved by further revising and recirculating the DEIR. Many of the Plan's most significant environmental impacts have been understated or swept under the rug, and certification of the DEIR in its current form would constitute a prejudicial abuse of discretion. Accordingly, Gateway objects to the certification of the EIR and to the approval of the project for the following reasons:

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A. Inadequate Analysis of Impacts to Land Use.

An EIR's analysis of significant environmental impacts must identify and describe the significant direct environmental impacts that will result from the project in both the short term and the long term. 14 Cal.Code Regs. § 15126.2(a). In addition to its analysis of direct effects, an EIR must identify and describe the significant indirect environmental impacts that will result from the project. Id. An indirect environmental impact is a change in the physical environment that is not immediately related to the project but that is caused indirectly by the project. 14 Cal.Code Regs. § 15064(d)(2). Indirect effects are changes to the physical environment that occur later in time or farther removed in distance than direct effects. 14 Cal.Code Regs. § 15358(a)(2). Indirect effects can include growth-inducing effects and other effects relating to a change in the pattern of land use, population density, or growth rate induced by a project. Id.

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Despite these clear requirements of the CEQA Guidelines, the DEIR utterly fails to consider the impact of downzoning Gateway's Property, which is over 300 acres of primarily raw land located immediately adjacent to the City of Santa Clarita, with easy access to roadways including I-5 and SR-14, emergency services and utilities. Gateway currently proposes 124 single family lots for the

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Property. However, the proposed Plan, designating the Property as RL10, would likely permit a development of only 30 lots, driving potential residents away from major freeways and city services.

In addition, the DEIR provides no analysis of the impacts of rezoning the Property from A-2-1 (one acre per lot) to A-2-2 (two acres per lot) on a developer's ability to adequately cluster development to retain open space.

As it impacts Gateway's Property, the Plan violates several of SCAG's Regional Transportation Plan ("RTP") Goals. For example, RTP Goal 1 is to maximize mobility and accessibility for all people and goods in the region. However, as discussed above, the practical effect of the Plan as it relates to the Property is that potential residents are forced away from major roadways, with far less convenient access to the goods and services offered within the City of Santa Clarita and the nearby San Fernando Valley.

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Similarly, RTP Goal 5 is to protect the environment, improve air quality and promote energy efficiency. But, as it relates to the Property, the Plan force residents drive farther to access major freeways, with resulting negative impacts to the environment and air quality.

Finally, RTP Goal 6 is to encourage land use and growth patterns that complement our transportation improvements and improves the cost-effectiveness of expenditures. The vicinity of the Property is fully improved with two major freeways along with many other major roadways. Yet the practical effect of the Plan, as it relates to the Property, would push potential residents away from these established transportation improvements.

The DEIR fails to provide sufficient analysis of the Plan's effect on land use, and should not be certified without consideration of these significant and foreseeable consequences of implementation of the Plan.

B. Inadequate Analysis of Impacts to Biological Resources.

An EIR must contain facts and analysis, not just an agency's bare conclusions or opinions. Citizens of Goleta Valley v. Board of Supervisors, *supra*, 52 Cal.3d at 568. Specific data should be presented when it is necessary for a meaningful analysis of a significant impact. Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs, 91 Cal.App.4th 1344, 1381 (2001); Cadiz Land Co. v. Rail Cycle, 83 Cal.App.4th 74, 93 (2000).

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Here, the DEIR's analysis of impacts to biological resources is defective because the DEIR admits that there is a lack of data and only limited studies on certain biological resources that may or may not exist in the Plan's proposed Santa Susana Mountains/Simi Hills Significant Ecological Area ("SEA"), among other proposed SEAs. See DEIR, 3.7-39, 40.

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Moreover, the DEIR identifies certain animal species as being only "potentially present" (DEIR, 3.7-40), and other species as "reasonably expected to occur" within the proposed SEA. DEIR, 3.7-41.

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The DEIR's conclusions are therefore impermissibly based upon assumptions versus any actual study of the proposed SEA, and lack meaning. See Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs, *supra*, 91 Cal.App.4th at 1381.

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The DEIR's deficiencies in this regard are especially significant when considering certain of the Plan's Policies, such as CO 3.7.2 and 10.1.1, which stress the importance of public access for education and recreation in SEAs and Open Space, and Mitigation Measure 3.7-3, which requires public acquisition of SEAs and Open Space land. Unsubstantiated proposed designations of SEAs in the Plan are apparently being utilized to avoid compensable taking of private property for public use. See Agins v. City of Tiburon, 447 U.S. 255, 262 (1980) [ordinances limiting development which prevent best use of owner's land and/or extinguish a fundamental attribute of ownership may be compensable taking].

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Given the significant consequences of the proposed SEA designations to the owners of private property, the DEIR must be further revised and recirculated after biological resource data is collected by actual field work in the proposed SEAs.

C. Inadequate Analysis of Impacts to Population and Housing.

The DEIR acknowledges that the population within the County's Planning Area would be 270,000 at buildout of the current Area Plan, but would be only 237,387 at buildout of the proposed Area Plan. However, the DEIR fails to properly consider or analyze the potentially significant impacts of reducing population growth within the Planning Area by 32,613 on the demand for housing outside of the Planning Area.

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The DEIR concludes that implementation of the proposed Area Plan would not displace a substantial number of houses or people because the Plan contains policies aimed at protecting existing housing within the County's Planning Area. DEIR, 3.19-18. As discussed above, Gateway currently proposes 124 single family lots for the Property. However, the proposed Plan, designating the Property as RL10, would likely permit a development of only 30 lots. Moreover, the proposed SEA designation over a majority of the Property may further limit the number of single family lots Gateway may develop. The DEIR fails to consider the impact of the reduction of future housing.

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III.
CONCLUSION.

In conclusion, in a number of areas, the DEIR does not adequately disclose, describe and analyze impacts of implementation of the Plan. Since the impacts have not been adequately disclosed or analyzed, the Mitigation Measures proposed are inapplicable or insufficient to mitigate the significant environmental impacts of the Plan. As a result of the lack of disclosure, analysis and mitigation, the County of Los Angeles is required to further revise and recirculate the DEIR pursuant to CEQA.

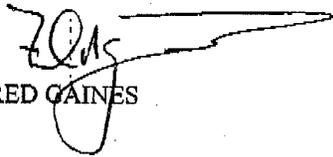
14

On behalf of Gateway, we respectfully submit these comments and look forward their responses and a more meaningful analysis of the Plan in a revised and recirculated EIR. Please include this law firm on the City's mailing list for any future documents and public hearing notices regarding this matter. Thank you for your consideration.

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Sincerely,

GAINES & STACEY LLP

By 
FRED GAINES

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Letter No. D93

Letter from Gaines & Stacy LLP, January 24, 2011

Response 1

This comment is an introduction to comments that follow. No further response is required.

Response 2

The comment raises issues that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required. That being said, the comment states that “Despite the many environmental and aesthetic benefits of Gateway’s proposed project [Vesting Tentative Tract Map 71279], it would not be permitted under the Plan.” It should be noted that the proposed Area Plan’s Introduction includes the following language: “Completed applications filed prior to the effective date of this Area Plan shall be allowed to be reviewed for consistency with the previously adopted Area Plan. Projects may be maintained as originally approved provided the approval is still valid and has not expired. Any subsequent change(s) of use or intensity shall be subject to the policies of this Area Plan.” Therefore, if Vesting Tentative Tract Map 71279 is a completed application filed prior to the effective date of the proposed Area Plan, it shall be allowed to be reviewed for consistency with the current Area Plan, not the proposed Area Plan. Furthermore, if Vesting Tentative Tract Map 71279 is approved, the project may be maintained as originally approved, provided that such approval is still valid and has not expired. Vesting Tentative Tract Map 71278, if approved, would be subject to the policies of the proposed Area Plan only if changes of use or intensity are proposed after approval, provided that the Board of Supervisors adopts the aforementioned language in the proposed Area Plan’s Introduction and provided that Vesting Tentative Tract Map 71279 is a completed application filed prior to the effective date of the proposed Area Plan.

Response 3

This comment is an introduction to comments that follow. No further response is required.

Response 4

The comment provides a recitation of various principles pursuant to the California Environmental Quality Act (CEQA), apparently as background information only and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 5

The comment states that the proposed Area Plan and Revised Draft EIR are seriously defective and do not meet the requirements and mandated by CEQA, but provides no specific criticism and is an introductory comment to those that follow. The County disagrees that the Revised Draft EIR is deficient, but can provide no further response since no specifics were provided in the comment. *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 378 (where a general comment is made, a general response is sufficient.). The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 6

The comment states that the Revised Draft EIR fails to consider the proposed land use designation for Gateway's property, which would reduce the allowable housing density. The Revised Draft EIR addressed all of the potential environmental impacts of the proposed Area Plan. Because the Area Plan is a long-range planning document with an extensive scope that applies to thousands of parcels, it does not analyze each parcel specifically. The commenter should refer to Section 1.0, Introduction, pages 1.0-6 and 1.0-7 of the Revised Draft EIR for a discussion regarding the degree of analysis and specificity for a Program EIR:

"CEQA provides a lead agency with the flexibility to prepare different types of EIRs, and to employ different procedural means to focus environmental analysis on the issues appropriate for decision at each level of environmental review (Public Resources Code Section 21093(a)). CEQA provides that the 'degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.'³⁶

This EIR can be classified as a 'Program EIR.' A Program EIR may be prepared on a series of actions that can be characterized as one large project and are related either geographically; as logical parts in the chain of contemplated actions; in connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways. The Program EIR enables an agency to examine the overall effects of the proposed course of action and to take steps to avoid unnecessary adverse environmental effects. According to Section 15168 of the *State CEQA Guidelines*, the Program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the Program EIR, and no further environmental documents would be required.

³⁶ *State CEQA Guidelines* Section 15146

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

This program EIR evaluates the broad-scale impacts of the County's proposed Area Plan. The Area Plan will be a component of the County's General Plan. The Area Plan EIR, addressing the potential impacts of the County's goals, objectives, and policies for the unincorporated portions of the Valley can be thought of as a 'first tier' document. It evaluates the large-scale impacts on the environment that can be expected to result from the adoption of the Area Plan, but does not necessarily address the site-specific impacts that may be caused by each of the individual development projects that will follow and be implemented in the Area Plan. CEQA requires each of those subsequent development projects to be evaluated for their particular site-specific impacts. These site-specific analyses are typically encompassed in second-tier documents, such as project EIRs, focused EIRs, and mitigated negative declarations on individual development projects subject to the Area Plan, which typically evaluate the impacts of a single activity undertaken to implement the overall plan. The Program EIR can be incorporated by reference into subsequent documents to focus on new or site-specific impacts.

This EIR anticipates a series of actions needed to achieve the implementation of the proposed Area Plan. Further actions or procedures required to allow implementation of the proposed Area Plan include the processing of Specific Plans, tract and parcel maps, site design plans, building permits, and grading permits."

The comment states that the Plan violates SCAG's Regional Transportation Plan Goal 1, Goal 5, and Goal 6. The comment further states that the Revised Draft EIR does not provide sufficient analysis of the Plan's effect on land use. The commenter should refer to Section 3.1, Land Use, of the Revised Draft EIR which provides a detailed description of the land use designation changes proposed by the proposed Area Plan as well as an analysis of these changes in accordance with the thresholds of significance established by the *State CEQA Guidelines*. The commenter should also refer to pages 3.1-34 through 3.1-42, which provide an analysis of the proposed Area Plan's consistency with SCAG's RTP goals. The Revised Draft EIR does not conclude that the proposed Area Plan is inconsistent with SCAG's goals. No further response is required but the following paragraphs provide additional information and clarification.

The comment states "Gateway [Vesting Tentative Tract Map 71279] currently proposes 124 single family lots for the Property. However, the proposed Plan, designating the Property as RL10, would likely permit a development of only 30 lots, driving potential residents away from major freeways and city services." The commenter is directed to **Response 2**, above, regarding pending projects. That being said, with regard to the proposed RL10 land use designation, the Land Use Element of the proposed Area Plan states that "a comprehensive assessment of existing land uses and their distribution was conducted using aerial photo analysis, field surveys, and a geographic information system. Land was evaluated for suitability of development type and intensity based on topography, access, proximity to infrastructure, environmental constraints, character of surrounding development, economic viability, and other criteria." This comprehensive assessment evaluated land for suitability of development type and intensity to ensure that the proposed Land Use Policy Map was consistent with the Goals, Objectives, and Policies of

the proposed Area Plan's Land Use Element. In conducting this comprehensive assessment, County staff observed that the Gateway property contained environmental constraints (including steep slopes and the proposed Santa Susana Mountains/Simi Hills Significant Ecological Area, or SEA) that would preclude intense residential development. Accordingly, County staff determined that an RL10 designation, with a maximum density of one dwelling unit per 10 acres, was appropriate, as it reflected these constraints, precluded intense residential development, and ensured that future development would be compatible with the low-density rural character of the immediate area.

The comment also states, "the Draft EIR provides no analysis of the impacts of rezoning the Property from A-2-1 (one acre per lot) to A-2-2 (two acres per lot) on a developer's ability to adequately cluster development to retain open space." Note, however, that the Land Use Element of the proposed Area Plan includes the following language in its description of the proposed RL10 land use designation: "Density-controlled development (clustering) is permitted in this designation in accordance with the provisions of the Zoning Ordinance, provided that all residential lots meet the minimum lot size requirements of a Community Standards District, where applicable." Therefore, the proposed rezoning of the Gateway property from A-2-1 to A-2-2 does not impact a developer's ability to adequately cluster development to retain open space, as the description of the proposed RL10 designation explicitly allows density-controlled development (clustering) in accordance with the provisions of the Zoning Ordinance (for example, Section 22.56.205) and, where applicable, a Community Standards District (CSD). A CSD is an overlay in the Zoning Ordinance that allows for community-specific development standards, such as minimum lot size requirements. Although several CSD's have been adopted within the unincorporated Santa Clarita Valley, none of these CSD's apply to the Gateway property.

Response 7

The comment recited CEQA legal principles with no reference to the Revised Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 8

The comment states that the Revised Draft EIR is defective because there is a lack of data and limited studies concerning the proposed Santa Susana Mountains/Simi Hills Significant Ecological Area (SEA).

The County does not concur that the Revised Draft EIR is defective due to a lack of data. Several SEA's are proposed within the unincorporated Santa Clarita Valley, including the Santa Susana Mountains/Simi Hills SEA, based upon review of sensitive species that may be in an area. This review is based on previous surveys of habitat and corresponding species known to be in the area and review of aerial

photos. The referenced page 3.7-39 in the comment is disingenuous and misleading as it only alludes to a portion of the description of available resources. Revised Draft EIR, page 3.7-39 reads as follows: “The analysis of invertebrates in this study is difficult due to the lack of data, although limited studies have been conducted. The SEA is believed to support healthy populations of a diverse assortment of countless invertebrate species. Amphibian populations are generally restricted in semi-arid and arid habitats but may be particularly abundant where riparian areas occur. The SEA is likely to support a variety of amphibians in abundance within wetland areas along the major canyon bottoms and the moister oak woodland areas. Many essential reptilian habitat characteristics such as open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather are present within the SEA. These characteristics as well as the variety of habitat types present are likely to support a wide variety of reptilian species.”

Response 9

The comment restates information contained in the Revised Draft EIR and does not raise an environmental issue within the meaning of CEQA. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

Response 10

The comment states that the conclusions in the Revised Draft EIR are impermissible based upon assumptions versus actual study, and lack meaning. The comment provides no specificity as to what conclusions are impermissible, are based upon assumptions versus actual study, and lack meaning. That being said, the only way to determine that a species is absent from a property is to conduct surveys consistent with the Significant Ecological Area Technical Advisory Committee (SEATAC) Guidelines. The SEATAC Guidelines are clear, in that the designation of the SEAs is approximate based upon a number of factors. Detailed biological surveys must be conducted by a County-approved biologist to determine presence of species. Please also see **Response 6** above, with regard to the level of specificity required of a Program EIR.

Response 11

The comment states that the Revised Draft EIR must be revised and recirculated after biological data is collected on the proposed SEAs because of “significant consequences” to “the owners of private property.” The comment further states that designations of SEA’s are being utilized to “avoid compensable taking” of private property.

The Proposed SEAs are not based on any legal “takings” principle. Rather, they are based on environmental considerations. The Revised Draft EIR includes biological data regarding the proposed

2.0 Topical Responses, Comment Letters, and Responses to Comment Letters

SEA's. For instance, there is suitable habitat in the Santa Susana Mountains/Simi Hills SEA to support coastal sage scrub on south facing slopes and riparian oak woodlands in the valleys. Sensitive species include those listed, or candidates for listing by the United States Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), and the California Native Plant Society (CNPS). Species which have been recorded within the SEA as well as those reasonably expected to occur include, but are not limited to, Lyon's pentachaeta, Nevin's barberry, Braunton's milk vetch, slender-horned spineflower, arroyo southwestern toad, California red-legged frog, California condor, Swainson's hawk, white-tailed kite, and southwestern willow flycatcher. The table includes locations of sensitive species observed, recorded in the California Natural Diversity Database (CNDDDB), or reported in previous documentation as observed within or in the immediate vicinity of the SEA. (see Revised Draft EIR, pg. 3.7-15, 3.7-16, and 3.7-36 through 3.741). Figure 3.7-1 shows the approximate locations of where these species have been located based on records reported to the CDFG. But this does not mean that these species are only located at the locations on Figure 3.7-1. They could very well be in adjacent areas that contain habitat that support them. The only way to determine that a species is absent from a property is to conduct surveys consistent with the SEATAC Guidelines mentioned in **Response 10**, above. The SEATAC Guidelines are clear, in that the designation of the SEAs is approximate based upon a number of factors. Detailed biological surveys must be conducted by a County-approved biologist to determine presence of species. If detailed surveys determine that species are not present, development may occur as acknowledged in the SEATAC Guidelines and Section 22.56.215 of the Zoning Ordinance. Accordingly, the designation of proposed SEA's does not constitute a "take" of property. As stated in Section 22.56.215.B.1 of the Zoning Ordinance (emphasis added): "*A conditional use permit is required in order to protect resources contained in significant ecological areas and in hillside management areas as specified in the county General Plan from incompatible development, which may result in or have the potential for environmental degradation and/or destruction of life and property. In extending protection to these environmentally sensitive areas, it is intended further to provide a process whereby the reconciliation of potential conflict within these areas may equitably occur. It is not the purpose to preclude development within these areas but to ensure, to the extent possible, that such development maintains and where possible enhances the remaining biotic resources of the significant ecological areas, and the natural topography, resources and amenities of the hillside management areas, while allowing for limited controlled development therein.*"

Finally, impacts that are solely economic in nature, i.e., "consequences" to private "property owners," are not a significant environmental impact that needs to be addressed in an EIR. [California Public Resources Code section 21080(e)(2)]. The comment regarding impacts on property owners, however, will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 12

The comment states that the Revised Draft EIR fails to account for the demand for housing outside of the Planning Area, given reduced number of allowable housing units in the proposed Area Plan.

Section 4.0, Cumulative Impacts, of the Revised Draft EIR analyzes the cumulative impacts of the proposed Area Plan. Although the proposed Area Plan would reduce allowable housing densities in many portions of the unincorporated Santa Clarita Valley, resulting in a reduced number of allowable housing units, the County has previously approved thousands of housing units (predominately single-family units) that have not yet been built and could be built when the demand for new housing increases. The City of Santa Clarita, through its updated General Plan that was developed pursuant to the joint “One Valley One Vision” planning effort with the County, increased densities in its jurisdiction to accommodate additional housing, in close proximity to alternative modes of transportation. In addition, the City has also previously approved thousands of housing units that have not yet been built and could be built when the demand for new housing increases. There is no indication that areas outside of the Santa Clarita Valley, such as the Antelope Valley, will experience a pent-up demand for housing. It is well-known and documented that thousands of housing units have been previously approved in the Antelope Valley that have not yet been built and could be built when the demand for new housing increases.³⁷³⁸ The County believes that the Revised Draft EIR analyzed the cumulative impacts of the proposed Area Plan adequately and in accordance with the CEQA Guidelines. Furthermore, it should be noted that the Housing Element in the Countywide General Plan considered housing needs throughout the County’s unincorporated areas, including those in the Santa Clarita Valley and the Antelope Valley. The Housing Element was adopted by the Board of Supervisors on August 5, 2008 and is available on the Internet:

http://planning.lacounty.gov/assets/upl/project/housing_20090126-housing-element.pdf

Response 13

The comment states that the Revised Draft EIR fails to analyze the reduction of allowable housing units. Please see **Response 12** above. Furthermore, the reduction of allowable housing units reduces the environmental impacts associated with the proposed Area Plan. The Revised Draft EIR compares the impacts of the currently adopted Area Plan to the impacts of the proposed Area Plan, which reduces the number of allowable housing units. Review of the Revised Draft EIR shows reductions in traffic, air quality, noise, and biological resource impacts at buildout of the proposed Area Plan when compared to

³⁷ Antelope Valley housing market feels like early ‘90’s again, Los Angeles Times, April 10, 2010

³⁸ Slow Economic Growth Projected for Northern Los Angeles County, April 28, 2011

the buildout of the currently adopted Area Plan. From a CEQA perspective, the proposed Area Plan, which proposes the reduction of allowable housing units, is environmentally superior.

Response 14

The comment states that the Revised Draft EIR does not adequately disclose, describe and analyze the impacts of the implementation of the proposed Area Plan. The comment further states that since the impacts have not been adequately disclosed or analyzed, the mitigation measures proposed are inapplicable or insufficient to mitigate the significant impacts of the proposed Area Plan. Consequently the Revised Draft EIR must be revised and re-circulated. The County does not concur with this conclusion. Moreover, the comment provides no details and appears to simply be a conclusory remark, thus the County cannot provide a further detailed response. *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 378 (where a general comment is made, a general response is sufficient). The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan.

Response 15

The commenter stated that he looks forward to receiving responses and a re-circulated Revised Draft EIR and requests to be on the County's mailing list for this project. The comment is acknowledged, however, for the reasons set forth in **Responses 1** through **14** above, the County believes that no comments provided by the commenter require revising or recirculating the Revised Draft EIR. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. As requested, the commenter has been added to the County's mailing list for this project and will receive these responses.

Regional Planning Commission
County of Los Angeles
320 West Temple Street
Los Angeles, CA 90012

Dear Planning Commission:

Subject: Extension of Mc Bean Parkway onto San Francisquito Cyn Road
One Valley One Vision

On behalf of the San Francisquito Cyn Preservation Association, the newly adopted Community Standards District approved in November 2009, and as the Area 11 Director for Equestrian Trails, Inc., I am respectfully requesting that the consideration and implementation of this extension be disapproved and abandoned.

This community worked three years to acquire their Community Standards to protect the rural equestrian nature of this canyon. The community has retained and added 4 more horse boarding facilities, retained 100% horse keeping and trails on the approved Sun Cal Project in the canyon and also retained horse keeping lots on the recently approved San Francisquito Cyn Ranchos adjacent to Don-E Brook Farms.

ETI is an active member of The Santa Clarita Trails Advisory Committee and is currently working on the plans for a required trailhead at the location of Mc Bean and Copperhill Road. The area for this proposed trail head is approximately one-half acre. If this extension is deleted, this trail head would be of an adequate size to accommodate future Supervisor Antonovich Trail Rides and the safety of this trail head would be greatly enhanced for all who come here to ride the Cliffie Stone Trail and others in the vicinity. This extension does not uphold Supervisor Antonovich's motion to protect, enhance, expand, and preserve the equestrian lifestyle.

1

Please deny this extension for the safety of all of the ranches and horseback riders to safely cross the street to the Regional, backbone, and other proposed horse keeping lots and protect our rural standards.

This extension will only increase the speed of vehicles, deny safe crossings without signals, and defeats the purpose of our Community Standards.

Sincerely,

Debbie Foster, Area 11 Director
Equestrian Trails Inc, SCVTAC,
and San Francisquito Cyn Preservation Association

Letter No. D94

Letter from Debbie Foster, March 2011

Response 1

The commenter expresses opposition to the extension of McBean Parkway onto San Francisquito Canyon Road on behalf of the San Francisquito Canyon Preservation Association. The commenter points out that the San Francisquito Canyon Preservation Association worked for three years to acquire their Community Standards, which has helped to retain or add more horse boarding facilities and horsekeeping lots. The commenter also states that Equestrian Trails International is active in the Santa Clarita Valley Trails Advisory Committee and is involved in plans for a required trailhead at the location of McBean Parkway and Copperhill Drive. The commenter expresses the opinion that the removal of the McBean Parkway extension would make it possible for this trailhead to be of adequate size to accommodate future Supervisor Antonovich Trail Rides.

The commenter raises issues related to the proposed Area Plan that do not appear to relate to any physical effect on the environment. The comment will be included as part of the record and made available to the decision makers prior to a final decision on the proposed Area Plan. However, because the comment does not raise an environmental issue, no further response is required.

The commenter also states that the proposed extension will only increase the speed of vehicles on San Francisquito Canyon Road and make it difficult for horseback riders to safely cross the road to get to equestrian facilities.

The comment addresses general subject areas concerning circulation and safety, which received extensive analysis in the Revised Draft EIR in Section 3.2, Transportation and Circulation. Specifically, pages 3.2-62 to 3.2-63 of Section 3.2, Transportation and Circulation, addresses roadway safety as follows:

“The proposed Area Plan promotes changes to the designs of specific roadways that enhance their safety. These include increasing the number of lanes on major highways and other improvements under the proposed Highway Plan (see Appendix 3.2 for a detailed description of the Highway Plan). Hazards due to roadway design features would be evaluated on a project-by-project basis as buildout of the proposed Area Plan occurs. However, the proposed Area Plan does contain several policies that would reduce the potential for hazardous design.

The County would periodically monitor levels of service, traffic accident patterns, and physical conditions of the existing street system, and upgrade roadways as needed through the Capital Improvement Program (Policy C 2.1.5). Additionally, the County would apply consistent standards throughout the Santa Clarita Valley for street design to promote travel safety. It would accomplish this by designating roadways based on their functional classification (Policy C 2.2.1), adopting consistent standard street cross sections (Policy C 2.2.2), coordinating circulation plans of new development project with each other (Policy C 2.2.3), and adopting common standards for pavement width (Policy

C 2.2.5). Within residential neighborhoods, “healthy streets” would be promoted through traffic-calming devices, shorter block length, and other considerations (Policy C 2.2.6). Where practical, the use of a grid or modified grid street system would be encouraged (Policy 2.2.7), and local street patterns would be designed to create logical and understandable travel paths for users and discourage cut-through traffic (Policy C 2.2.8). As set forth by Policy C 2.2.10, the street system design, including block length, width, horizontal and vertical alignments, curves, and other design characteristics, should function safely and effectively without the subsequent need for excessive traffic control devices to slow or deflect traffic. For intersections of collector or larger streets, four-way intersections would be preferred over offset intersection (Policy C 2.2.11), and private streets would typically be constructed to standards for public rights-of-way (Policy C 2.2.12).”

In addition, County staff has added the following language to the Circulation Element in the proposed Area Plan:

San Francisquito Canyon Road Extension

The Circulation Element includes a proposed extension of San Francisquito Canyon Road, north of Copper Hill Drive that would connect directly to McBean Parkway. Prior to the adoption of this Area Plan, the proposed extension was designated as a Secondary Highway. As mentioned earlier in this Element, the proposed extension was recommended to be reclassified as a Limited Secondary Highway as a result of the traffic analysis conducted for this Area Plan. Accordingly, the proposed extension is now designated as a Limited Secondary Highway on the Master Plan of Highways (see Exhibit C-2 in this Area Plan).

The community expressed concerns regarding the proposed extension of San Francisquito Canyon Road. Although the community acknowledged that a Limited Secondary Highway would have fewer potential impacts on the local community than a Secondary Highway, they requested that the proposed extension be completely removed from the Master Plan of Highways. The request was evaluated and it was determined that the proposed extension should remain on the Master Plan of Highways. The determination was based on the need for safe, effective circulation in the area, as the proposed extension is superior to the current alignment of San Francisquito Canyon Road. However, the community’s concerns were acknowledged, especially as they related to equestrian users.

Prior to the construction of the proposed extension of San Francisquito Canyon Road, the County will conduct outreach to the community and will investigate any concerns that are expressed. To ensure that concerns are addressed and potential impacts are minimized, the County will also implement any required traffic mitigations. These mitigations could include an equestrian crossing above or below the roadway, provided that the crossing is technically, environmentally, and financially feasible.