Chapter 4

CONSERVATION AND OPEN SPACE ELEMENT

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Conservation and Open Space Element

I. PURPOSE & INTENT

The Conservation and Open Space Element combines two of the mandatory Area Plan elements required by State law into a single element. Section 65302(d) of the California Government Code requires "a conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources." Article 10.5 of the Government Code establishes the framework for open space planning by local jurisdictions and the required contents of an Open Space Element, including open space for outdoor recreation, public health, and the safety and preservation of natural resources.

Many resource conservation issues are related to planning for open space preservation. For example, lands containing significant natural resources, such as Towsley Canyon and Elsmere Canyon, are designated as open space on the Area Plan Land Use mMp. Some historical and cultural resources have been incorporated into park and recreational facilities, such as the William S. Hart Park and Museum. Many hiking and recreational trails connect open space lands with developed parks, and provide access to natural resource areas. Open space areas provide opportunities for groundwater percolation to enhance water quality and recharge of groundwater aquifers. These examples show the connection between resource protection and open space preservation, and highlight the benefits of planning for both as a coordinated effort. Because of the close relationship between resource conservation and open space planning, these two topics have been combined into an integrated Conservation and Open Space Element.

This combined Element establishes a policy framework for the designation and long-term preservation of open space within the planning area, and addresses the wide range of community benefits derived from open space. In addition to providing land for park and recreational facilities, open spaces provide the benefits of wildlife habitat preservation, scenic views, water recharge and watershed protection, enhancement of air quality, protection of cultural and historical resources, moderation of microclimates, and enhanced property values. In addition, preservation of scenic and accessible open spaces around the urbanized portions of the Valley, and between neighborhoods and districts, contributes to community character and the distinctive sense of place enjoyed by Santa Clarita Valley residents.

II. BACKGROUND

Consistency with Other Area Plan Elements

The Conservation and Open Space Element of the Area Plan is consistent with the Land Use Element, because those areas having value for resource conservation purposes have been designated for open space, agriculture, or rural, low-density development on the Land Use Map. In addition, policies in the Conservation and Open Space Element to protect air and water quality are consistent with Land Use Element policies promoting mixed use development and sustainable and walkable communities. The Conservation and Open Space Element is consistent with the Circulation Element, because both Elements promote air quality goals through multi-modal strategies to reduce vehicle trips. The Element is consistent with the Safety Element, because many of the areas prone to natural hazards, such as flooding and seismic shaking, are also subject to conservation issues such as water quality, groundwater recharge, slope stability, and soil erosion; the maps, policies and programs of both elements have been coordinated to preserve such areas as open space. The Element is consistent with the Noise Element, because policies have been included to ensure that noise from aggregate resource extraction will not be detrimental to residents and other sensitive uses, and that noise from human activities will not be detrimental to natural communities.

Resource Maps

The background, goals and policies of this Conservation and Open Space Element are supplemented with exhibits that show the locations and extent of the following resources within the planning area:

- Significant ridgelines and hillsides subject to development restrictions (Figure CO-1);
- Mineral Resources, including areas with significant aggregate resources as designated by the State (Figure CO-2);

- Water Resources, including surface waters such as rivers and lakes, and underground basins (Figure CO-3);
- Biological Resources (Figure CO-4) and Significant Ecological Areas as designated by the County (Figure CO-5);
- Cultural and Historical Resources, including areas of local significance as well as sites having State or national historical designations (Figure CO-6);
- Scenic Resources, including canyons, geological features, and significant ridgelines (Figure CO-7);
- Open Space Resources, including passive and active parks and natural open areas protected for resource conservation (Figure CO-8);
- Master Plan for Trails, including regional, County, and City trails and bikeways (Figure CO-9).

Development and conservation policies have been established for each of these resource types as set forth in this Element.

Organization of the Element

The Background section of the Conservation and Open Space Element contains subsections for the following resource issues: soils and geological resources; water, including water supply, quality and conservation; biological resources; cultural and historical resources; air quality, energy conservation and climate change; parks, recreation, and trails; and open space conservation. Goals, objectives and policies have been included to address each of these issues.

III. PRIOR PLANNING EFFORTS FOR CONSERVATION & OPEN SPACE

City Planning for Conservation & Open Space

The City adopted its first Open Space and Conservation Element in 1991, and updated the Element in 1999. The Element addressed the issues of open space, biological resources, soil resources, mineral resources, water resources, energy conservation, and cultural and historical resources. Policies in the Element addressed preservation of natural features and ridgelines, sensitive habitats, recreation, the designation of open space as a buffer from natural hazards, protection of mineral resources, groundwater quality and recharge, and preservation of cultural resources. In addition, policies were included to address energy conservation and recycling. In order to implement the resource conservation policies of the original General Plan, the City adopted ordinances as part of Title 17 (Zoning) of the Municipal Code to regulate soil erosion and dust prevention, hillside development, ridgeline preservation, stormwater quality, and oak tree preservation. The City also adopted a Park and Recreation Master Plan in 1995, which is currently being updated; and an Open Space Acquisition Plan in 2002, which will be updated as part of the Open Space Initiative passed by the voters in 2007. The City adopted the Non-Motorized Plan in 2008. These plans are discussed in greater detail in subsequent sections of this Element.

County Planning for Conservation & Open Space

The County adopted the Santa Clarita Valley Area Plan in 1984 with a comprehensive update in 1990 to address specific planning issues within the Valley. Areas with special significance for resource preservation were depicted on the Land Use Map of the Area Plan, including Open Space, Hillside Management, Significant Ecological Areas, and Floodways/Floodplains. The Area Plan contained a Scenic Highways Plan and plans for Trails and Bikeways, along with goals and policies to promote preservation of open space and conservation of resources. Hillside development policies were included for areas with slopes of 25 percent or greater.

The County has also adopted ordinances to regulate and protect natural resources, including native oak trees, water quality, Significant Ecological Areas, and hillside development. In 2007 the County updated the Master Trails Plan for the Santa Clarita Valley, and has made numerous improvements to park and open space areas. More information about these topics is contained in applicable sections of this element.

IV. ENVIRONMENTAL SUSTAINABILITY

The term *sustainable development* has been defined as balancing the fulfillment of human needs with the protection of the natural environment, so that these needs can be met not only in the present, but in the indefinite future. The term was first used in 1980 in the *World Conservation Strategy*

published by the International Union for the Conservation of Nature. In 1987 the Brundtland Commission (established by the United Nations General Assembly) defined sustainable development as meeting "the needs of the present without compromising the ability of future generations to meet their own needs," and this definition has come into general usage.

Research on sustainable development has generally focused on four areas: environmental sustainability, economic sustainability, social sustainability, and political sustainability. For purposes of the Conservation and Open Space Element, the concept of environmental sustainability is addressed throughout the various background sections as well as in the goals and policies.

An environmentally sustainable approach to land use planning is an interdisciplinary process, considering proposed development and the surrounding ecosystem as components of interdependent systems. These systems are complex, interconnected, and dynamic. The fundamental basis of environmental sustainability is that the well-being of people is maintained and enhanced only when the integrity of the ecosystem is maintained; therefore, the outcomes of development decisions on all systems must be evaluated to ensure the well-being of both the human and natural environments. Sustainability should be considered at every level of urban organization, from individual development sites to neighborhoods, districts, and regions. Environmental sustainability goes beyond the concept of minimizing individual impacts through mitigation measures, and is instead a positive approach geared toward achieving long-term well-being for human and natural ecosystems.

Because the issues of air quality, energy consumption, water supply and quality, climate change, depletion of non-renewable resources, loss of biodiversity, use of land, and human health are all interrelated, ensuring environmental quality and public welfare requires new approaches to environmental protection. In the early years of regulation, environmental requirements focused on "end-of-pipe" treatment that limited the amount of pollutants entering water bodies and air basins from particular sources. In more recent years, the focus in environmental protection has shifted to "upstream" approaches called source controls, which may include minimizing resource use, reducing waste generation, product substitution, and producing fewer pollutants. Evaluating pollution control and waste minimization at the source requires a greater understanding of the wider impacts of development through the life cycle of construction, use, re-use, demolition, and recycling of materials – impacts that may go beyond the boundaries of the planning area, and that may extend over many years. Understanding life cycles for development projects requires a more integrated, systematic approach to evaluating and planning for development. For example, it has been pointed out that constructing a "green" building with recycled materials and energy-efficient lighting may have minimal benefit, if the location of the building causes a large increase in vehicle emissions due to its location many miles from employees, suppliers, and markets.

In the following background sections, and in the goals and policies set forth in of this Element, environmental sustainability has been addressed for the following issues:

- Renewable resource systems, including watersheds, aquifers, air resources, and biological resources;
- Non-renewable resource systems, including mineral resources, use of materials from fossil fuels, loss of open space, and generation of waste that cannot be recycled;
- Long-term chemical impacts, including existing and future pollutants that enter the environment from industrial, transportation, and other sources;
- Human-built systems, including land use, cultural resources, green building and design, and low impact development; and
- Information and decision-making, including developing tools for monitoring the well-being of environmental systems, and providing this information to decision-makers and residents to assist them in making more sustainable decisions.

Approaching the land planning process from a standpoint of environmental sustainability will require a shift in thinking on the part of local officials, staff, and builders. As with many new ideas, resistance to change is expected. Methods of reducing pollution have already been developed and are generally available at affordable prices, but have yet to be widely adopted. Recent studies have found that barriers to sustainability arise because technological and

economic systems and governing institutions are designed for permanence and reliability, rather than change. For example, the economic systems and social mores based on consumption of oil, including automobile sales and use, are rooted in American institutions and lifestyles. In other cases, sustainable materials and practices have not been adopted because cost savings would be deferred, rather than realized immediately. For instance, The Economist reported in 2007 that even though use of available energy-efficient materials and design practices can reduce the cost of operating buildings by 30 percent, most builders do not incorporate them in project design because they don't plan to own and operate the buildings long-term. Addressing the issue of resistance to change will be a major objective in creating more environmentally sustainable communities in the Santa Clarita Valley. Government, business, and citizens must work together to create a vision of sustainable development that includes both human and environmental wellness.

V. SOILS & GEOLOGIC RESOURCES

Soils & Geologic Resource Issues

State law requires that the Area Plan address the prevention, control, and correction of the erosion of soils, and the location, quantity and quality of the rock, sand, and gravel resources (Government Code Section 65302). Within the Santa Clarita Valley, the primary conservation issues with respect to soils and geologic resources are soil conservation; hillside development and ridgeline protection; and extraction of mineral resources.

Soil Resources & Conservation

The loss of topsoil is the most significant on-site consequence of erosion that occurs during and after construction or other soil disturbance. Topsoil is the soil layer that contains organic matter, plant nutrients, and biological activity. Loss of topsoil reduces the soil's ability to support plant life, regulate water flow, and maintain the biodiversity of soil microbes and insects that control disease and pest outbreaks. Loss of nutrients, soil compaction, and decreased biodiversity of soil inhabitants can severely limit the vitality of landscaping. This can lead to additional site management and environmental concerns, such as increased use of fertilizers, irrigation and pesticides, and increased stormwater runoff that contribute pollution to nearby water bodies.

The off-site consequences of soil erosion from developed sites include a variety of water quality issues. Runoff from developed sites carries pollutants, sediments and nutrients that disrupt aquatic habitats in the receiving waters. Nitrogen and phosphorous from runoff hasten eutrophication by causing unwanted plant growth in aquatic systems, including algal blooms that alter water quality and habitat conditions. Algal blooms can also result in decreased recreation potential and diminished diversity of indigenous fish, plant, and animal populations.

Sedimentation also contributes to the degradation of water bodies. The build-up of sedimentation in stream channels can lessen flow capacity, potentially leading to increased flooding. Sedimentation also affects aquatic habitat by increasing turbidity levels. Turbidity reduces sunlight penetration into the water and leads to reduced photosynthesis in aquatic vegetation, causing lower oxygen levels that cannot support diverse communities of aquatic life.

Erosion and sedimentation control measures are needed in order to minimize difficult and expensive mitigation measures in receiving waters. The cost of erosion and sedimentation control on construction sites involves minimal expense associated with installing and inspecting control measures and devices, particularly before and after storm events.

Best management practices have been established under the National Pollutant Discharge Elimination System (NPDES) as part of the federal Clean Water Act, to decrease erosion and sedimentation. The topic of post-construction runoff management continues to expand and is addressed in NPDES permits, which require pre-project runoff water balance, sedimentation balance, and channel protection. Policies have been included in the Area Plan to underscore the importance of soil conservation in the Santa Clarita Valley.

Hillside Development & Ridgeline Protection

The planning area is surrounded by the Santa Susana Mountains to the south and west, the San Gabriel Mountains to the southeast, and the Sierra Pelona Mountains to the north, all of which are part of the Transverse Ranges. Smaller hills and ridgelines bisect the valley floor, which contains the drainage courses of the Santa Clara River and its tributaries. About 45 percent of the planning area (168,345 acres)

contains land with slopes greater than 10 percent, and 7,866 acres of land contain slopes of 25 percent or greater (see Figure CO-1).

Both the City and the County have adopted policies and ordinances to regulate development in hillside areas, in order to protect the scenic quality and integrity of hillside areas from over-development and erosion. In the City, average slopes exceeding 10 percent are subject to special development standards, while in County areas such standards apply to land with average slopes of 25 percent or more. Both City and County standards for hillside development are intended to ensure that development in hillside areas maintains the natural topography, resources, and amenities of these areas. In addition, the City has designated significant ridgelines, and the County has designated significant ridgelines within the Castaic Area Community Standards District and the San Francisquito Canyon Community Standards District(see Figure CO-1). Standards have been adopted by both agencies to regulate development in order to preserve these scenic resource areas.

Policies have been included in this Element to support regulating development within hillside areas and along significant ridgelines in a consistent manner. In order to achieve a more uniform approach to regulating hillside development throughout the planning area, the City and County have agreed to cooperate on developing a set of hillside guidelines that would apply throughout the Santa Clarita Valley.

Mineral Resources

Mining activities in California are regulated by the Surface Mining and Reclamation Act of 1975 (SMARA). This Act provides for the reclamation of mined lands and directs the State Geologist to classify and map mineral resources to show where economically significant mineral deposits occur, or are likely to occur. Areas known as Mineral Resource Zones (MRZ) are classified according to the presence or absence of significant deposits. MRZ-2 areas are underlain by mineral deposits where geologic data indicate that significant measured, or indicated, resources are present.

The planning area contains extensive aggregate mineral resources. Almost 19,000 acres in the planning area are designated by the State as MRZ-2, or areas of prime importance due to known economic mineral deposits. Sand and gravel resources are primarily concentrated along waterways, including the Santa Clara River, the South Fork of the Santa Clara River, Castaic Creek, and east of Sand Canyon Road. A significant deposit of construction-grade aggregate extends approximately 15 miles from Agua Dulce Creek in the east, to the Ventura County line on the west.

As of 2003 there were about 525 acres of land in the planning area used for mineral extraction of sand, gravel, and rock. There were 14 permits for surface mining activities filed with the County. Generally, aggregate mining sites are located in Canyon Country, Agua Dulce, Mint Canyon, and Soledad Canyon (see Figure CO-2).

SMARA requires that significant mineral resources be protected from encroachment by incompatible development, as they provide a needed resource to support the construction of new homes, businesses, and roads. Mineral extraction within the County is an allowed use within agricultural zones, subject to approval of a surface mining permit. Within the City, areas that have significant mineral aggregate resources have been designated by a Zoning overlay district that permits extraction, along with other compatible uses.

The major goals of SMARA are to assure that (1) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses; (2) the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, wildlife, range and forage, and aesthetic enjoyment; and (3) residual hazards to the public health and safety are eliminated. These goals are achieved through the planning process by allowing the City and County to balance the economic benefits of resource reclamation with other land use and environmental goals. The Area Plan identifies significant mineral resource areas on the Mineral Resources Map, and contains policies to protect these areas from incompatible development, while ensuring that extraction and reclamation activities are compatible with other development and that adverse environmental impacts are mitigated.

The Santa Clarita Valley also contains other mineral resources which have been extracted historically, including gold, natural gas, and oil. Many older mines and oil wells have been abandoned, although several oil and natural gas wells are still in production (see Figure CO-2). Policies

have been included in the Element to ensure that wells are properly capped and mines sealed, and that any pollutants associated with extraction activities are remediated, in order to ensure public safety after these operations are completed.

VI. WATER RESOURCES

California Government Code Section 65302(d) requires that the "portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies that have developed, served, controlled or conserved water for any purpose for the county or city for which the plan is prepared." Further, it requires that the element address prevention and control of the pollution of streams and other waters, regulation of the use of land in stream channels required for accomplishment of the conservation plan, protection of watersheds, and flood control. In compliance with these requirements, this section addresses the issues of surface water, groundwater, and long-term water supply.

Surface Water Resources

The planning area is located within the Santa Clara River Valley basin, a watershed that encompasses approximately 1,634 square miles. The Santa Clara River is the largest river system in Southern California that remains in a relatively natural state. From its headwaters in the San Gabriel Mountains to its terminus at the Pacific Ocean, the Santa Clara River flows approximately 84 miles. Historically, the river has generally flowed year-round from the area near Interstate 5 westerly into Ventura County (a noted exception is the "dry gap" area located between the Los Angeles County/Ventura County line and Piru Creek). The upper reach of the river, has been typically dry except in periods following storm events; this portion of the river extends from the Bouquet Canyon Road overpass to Lang Station, located on Lang Station Road south of Soledad Canyon Road and east of Lost Canyon Road. Flows within the river are largely a result of stormwater runoff in the rainy months and wastewater treatment discharges in the drier months. Effluent from the Saugus Water Reclamation Plant (WRP) and Valencia WRP accounts for up to 40 percent of total stream flow within the Santa Clara River during the winter, and up to 90 percent during summer months.

Principal tributaries to the upper Santa Clara River include creeks located in Mint, Bouquet, San Francisquito, Castaic, Oak Spring, and Sand Canyons. The principal tributaries of the South Fork of the river, which drains in a northerly direction toward its confluence with the main course of the river, include Placerita Creek, Newhall Creek, and Pico Creek. At higher elevations these creeks are typically perennial, flowing all year unless rainfall is below normal. Flow in the stream canyons near the valley floor is normally limited to the rainy season.

Dry Canyon Reservoir is a 1,313 acre-foot storage facility located in Dry Canyon between Bouquet and San Francisquito Canyons, north of Saugus[1]. The reservoir was placed in service in 1913 to provide aqueduct storage and regulate flows in the Los Angeles Aqueduct, but was taken out of service in 1966 due to seepage problems. Currently the reservoir impounds water only during storms.

Castaic Lake is a 324,000 acre-foot storage facility created by an earth-filled dam across Castaic Creek. The reservoir serves as the West Branch Terminus of the California Aqueduct. In addition to its State Water Project (SWP) functions, the lake is operated to conserve local floodwaters for use in water recharge of underlying groundwater basins. Castaic Lagoon is located directly south and downstream of Castaic Dam, and was created by the California Department of Water Resources (DWR) to provide recreational opportunities. The Lagoon has a surface area of 197 acres and a capacity of 5,701 acre feet. Elderberry Forebay is also a part of the Castaic Reservoir system, and is an enclosed section of Castaic Lake. Surface water resources are shown on Figure CO-3.

Streams

Topographical maps prepared by the U. S. Geological Survey (USGS) show several types of water courses and drainage areas with different symbols, and these symbols have changed somewhat over time. Perennial streams (in which water typically runs year-round) and intermittent streams (in which water runs for only part of the year) are both shown with blue lines on most USGS maps, although some maps show intermittent streams with a brown dotted line or with a different line width from perennial streams.

1 An acre foot is the amount of water required to fill one acre to the depth of one foot, equivalent to 325,000 gallons, and is estimated to be the amount of water needed to serve two families of four for one year.

Wide wash areas are shown with a brown dot pattern. These symbols are used to delineate various topographic features, based on field observation or aerial photos. However, USGS does not claim legal authority for the classification of streams, and the stream classification used on the maps is a somewhat subjective process based on the observations and judgment of personnel in the field, during a limited period of time. Although USGS topographical maps are meant to be as accurate as possible in providing the public with information about topography and other mapped features, USGS does not perform scientific measurements to determine stream classifications.

This is an important point because of some confusion about the term "blue-line streams" as it has been used in legislation and in general discussion of stream characteristics. The term is sometimes used to refer to "jurisdictional waters," meaning areas that are under the jurisdiction of State and Federal agencies ("waters of the United States"). However, jurisdictional waters can include more streams than are shown on USGS maps; conversely, streams that are shown on topographical maps may no longer flow in the same location on the ground as what was shown on the map. As development has occurred in many areas, streams may have been diverted or channelized for flood control purposes, and drainage patterns may have changed. Topographical maps are updated periodically, but may not reflect all changes to stream courses. Therefore, topographical maps cannot be depended on as a final authority for delineating possible streams, riparian areas, or wetlands.

For this reason, the Area Plan does not use USGS topographical map information on blue line streams as a basis for planning or land use decisions. The most recent information available to the City and County on streambed locations are the Federal Insurance Rate Maps from the Federal Emergency Management Agency (FEMA) mapping program for flood control hazard areas. These maps were most recently updated in 2008, and the information from these maps has been included in the Safety Element as shown on Figure S-4, Floodplains.

It is not feasible to map all jurisdictional waters for the Area Plan, because each stream must be mapped individually by a trained specialist. Also, because streams change course over time, jurisdictional waters surveys are valid for only five years. However, the Conservation and Open Space Element contains policies to protect the Santa Clara River and its tributaries, as well as other riparian areas, from the adverse impacts of development. Development proposals that affect jurisdictional waters may also require permits from the U. S. Army Corps of Engineers, the California Department of Fish and Game, and the Regional Water Quality Control Board.

Groundwater Resources

Groundwater is concentrated into natural hydro-geological units called basins. An aquifer is a subsurface area where water collects, concentrates, and can be extracted within a basin. Multiple aquifers may be located within each basin. The three major groundwater basins underlying the planning area are the Santa Clara River Valley Groundwater Basin, East Subbasin (East Subbasin) and the Acton Valley Groundwater Basin. The East Subbasin encompasses the upper Santa Clara River Valley and is comprised of two aquifer systems, the Alluvium (also referred to as the Alluvial Aquifer), and the Saugus Formation. The Alluvial Aquifer generally underlies the Santa Clara River and its tributaries, and the Saugus Formation underlies nearly the entire Upper Santa Clara River area. Groundwater in the East Basin generally flows from east to west, following the movement of the Santa Clara River. The East Subbasin is the sole source of local groundwater for urban water supply in the Valley. Groundwater basins are shown on Figure CO-3.

Because up to 80 percent of the average annual precipitation occurs between November and March, most groundwater infiltration is in the form of winter-storm flow. However, the East Subbasin is also replenished by deep percolation of agricultural land, urban irrigation, percolation from septic tanks and leach field systems, and treated effluent from water reclamation plants.

The Acton Valley Groundwater Basin encompasses about 17 square miles and is bounded by the Sierra Pelona on the north and the San Gabriel Mountains on the south, east, and west. Groundwater in the basin is unconfined and found in alluvium and stream terrace deposits. The regional direction of groundwater flow is in a southwesterly direction toward Soledad Canyon. Replenishment of this basin is achieved through percolation of direct rainfall and infiltration of surface water runoff, agriculture and irrigation, and septic tanks. There is no pumping for urban water supply

and distribution from this basin, although individual users in the far eastern portion of the planning area may have private wells in the Acton Valley Groundwater Basin.

Natural or soft bottom drainage channels and wide natural floodways and flood plains maximize the groundwater recharge potential and help to replenish the aquifers. As an unchannelized river, the Santa Clara River and its tributaries provide opportunities for groundwater recharge. The best available evidence shows that no adverse impacts on basin recharge have occurred due to the existing use of local groundwater supplies, consistent with the Castaic Lake Water Agency (CLWA)/purveyor groundwater operating plan for the basin (see *2005 Basin Yield Report*). In addition, according to the memorandum prepared by CH2MHill (*Effect of Urbanization on Aquifer Recharge in the Santa Clarita Valley*, February 22, 2004), urbanization in the Santa Clarita Valley has been accompanied by long-term stability in pumping and groundwater levels, and the addition of imported SWP water to the Valley, which together have not reduced recharge to groundwater, nor depleted the amount of groundwater in storage within the local groundwater basin.

In March 2006, a technical memorandum specific to the recharge of the Saugus Formation, was prepared by Luhdorff & Scalmanini Consulting Engineers. This technical memorandum, *Evaluation of Groundwater Recharge Methods for the Saugus Formation in the Newhall Ranch Specific Plan Area*, presented the following findings:

- Historical observations for several decades have shown that there have been no long-term changes in groundwater storage or levels and that natural recharge processes have sustained groundwater levels, including long-term, essentially constant, high groundwater levels – without the need for artificial recharge operations to augment natural recharge to the basin.

- The future operating plan for the basin has been evaluated in both the 2005 Urban Water Management Plan and the 2005 Basin Yield Report and neither document calls for attempts to artificially recharge the basin.

- The Saugus Formation is generally recharged in the east to central portion of the basin. Groundwater flow in the basin is generally east to west with resulting groundwater discharge at the western end of the basin.

- If artificial recharge of the Saugus Formation were to become desirable in the future, the recharge is hydrogeologically feasible through injection wells. This mechanism would alleviate the need to set aside land area for artificial recharge purposes, and would likely occur in the eastern portion of the Saugus Formation. There would be no need for artificial recharge in the western part of the basin.

Water Supply

The primary sources of water in the planning area include groundwater pumped from the aquifers in the East Subbasin, supplemented by imported water from the State Water Project (SWP). Completed in 1972, the SWP is the largest water diversion system in the world, consisting of 22 dams and reservoirs; the largest of these is an earthen dam near Oroville which holds 3.5 million acre feet of surface runoff from the northern Sierras. When released from the Oroville Dam, SWP water flows down the Feather and Sacramento Rivers into the Sacramento-San Joaquin Delta, where it is pumped across the Delta to prevent it from flowing into the ocean. From the Delta, SWP water is conveyed 444 miles south through the Edmund G. Brown California Aqueduct, which parallels Interstate 5 as far as the Tehachapi Mountains. The water is raised 2,000 feet by the Robert D. Edmonston Pumping Plant, enabling it to be conveyed across the Tehachapi Mountains and into the Antelope Valley. The water is then distributed to SWP reservoirs in Castaic and Moreno Valley. At full capacity the SWP system can convey 4 million acre feet per year. About 30 percent of the water is used for agricultural irrigation, primarily in the San Joaquin Valley, and 70 percent is used for residential, municipal, and industrial use.

The most southerly reservoir on the West Branch of the SWP California Aqueduct is Castaic Lake. Castaic Lake Water Agency (CLWA) receives water from Castaic Lake and distributes it to the local purveyors following treatment. CLWA was formed in 1962 for the purpose of contracting with the California Department of Water Resources (DWR) to provide a supplemental supply of imported water to the water purveyors in the Valley. CLWA serves an area of 195 square miles in Los Angeles and Ventura Counties, with an annual contract for 95,200 acre feet of SWP water. The Agency treats and distributes a portion of SWP water to four water purveyors (also referred to as retailers) in the planning area, which in turn provide water to households and business customers in the City and unincorporated communities.

State law requires water utilities that serve over 3,000 customers to update and submit an Urban Water Management Plan (UWMP) every five years. CLWA and the four local retail water purveyors jointly prepared and adopted an UWMP for the Santa Clarita Valley in 2005. The 2005 UWMP was prepared for a 25-year planning horizon, through 2030, and addressed the following question: *Will there be enough water for the Santa Clarita Community in future years, and what mix of programs should be explored for making this water available?* The 2005 UWMP concluded that a reliable and high quality water supply would be available to Valley water customers, based on conservative water demand and implementation of conservation measures.

Although the 2005 UWMP acknowledged that SWP water will remain an important supplemental water supply source for the Valley in the long term, it also emphasized the need for conjunctive use of local groundwater, increased use of reclaimed water, and a substantial water conservation effort. Local water retailers currently pump over 50 percent of the domestic water supply from groundwater aquifers. This water is generally blended with SWP supplies prior to distribution to domestic customers.

Another source of water comes from transfers, exchanges, and groundwater banking programs. In 2007, CLWA completed acquisition of an 11,000 acre-foot per year supply of high-flow Kern River water that is being delivered to Castaic Lake using SWP facilities. In addition, CLWA has banked over 115,000 acre-feet in groundwater banks in Kern County; this water will be used to offset shortages during future dry years.

Due to the rapid growth in the Santa Clarita Valley, annual total water demand has more than doubled between 1980 and 2004 (from about 37,000 acre-feet to about 88,000 acre-feet). The UWMP projects annual increases in water usage of about 2.2 percent through 2030 *without* conservation measures in place, and 1.3 percent annual water usage increases *with* conservation measures. Projected 2030 demand is estimated at 138,300 acre feet. This estimate is in line with population growth projections prepared for the update of the City's General Plan and the County's Area Plan.

As part of the 2005 UWMP, water shortage contingency planning was also addressed by the water agencies. These contingencies included continued drought, an interruption of SWP delivery, and power outages. Plans for such contingencies include water conservation, mandatory limits on use, and penalties for excessive use, among other measures. The amount of SWP water supply delivered to the SWP contractors in a given year depends on the demand for the supply, the amount of rainfall, snowpack, runoff, water in storage, pumping capacity from the Delta, and legal and environmental constraints on SWP operation. According to the DWR, water delivery reliability depends on three general factors: (1) the availability of water at the source; (2) the ability to convey water from the source to the desired point of delivery; and (3) the magnitude of demand for the water.

A topic of growing concern for water planners and managers is climate change and the potential impacts it could have on California's future water supplies. Current literature suggests that climate change is likely to significantly impact the hydrological cycle, changing California's precipitation pattern and amount from that shown by the historical record. According to DWR, there is evidence that some changes are already occurring, such as snowmelt beginning earlier in the Sierras, an increase in water runoff as a fraction of the total runoff, and an increase in winter flooding frequency. More variability in rainfall, wetter at times and drier at times, would place more stress on the reliability of existing flood management and water supply systems, such as the SWP. Local responses to climate change due to greenhouse gas emissions are discussed in a later section of this Element.

Sacramento-San Joaquin Delta Issues Affecting Water Supply

After adoption of the joint 2005 UWMP by Santa Clarita Valley water agencies, a 2007 judicial decision concerning the Sacramento-San Joaquin Delta temporarily reduced water allocations by the SWP, pending further actions by the U. S. Fish and Wildlife Service (USFWS) to mitigate habitat impacts from water exports. As noted above, CLWA contracts with the DWR to purchase SWP water, with an annual contract amount of 95,200 acre feet. SWP water represents nearly half of the water used by Valley residents and businesses during a typical year, with groundwater resources providing the rest. Because of the importance of SWP water to continued growth and development in the Valley, a brief description of the issues pertaining to the Delta, and their impact on water supply, is provided in this section.

The current issues with distribution of SWP supplies result from a legal decision on a court case that concerned impacts of water pumping on fragile ecosystems of the Sacramento-San Joaquin Delta. The Delta is a network of natural and artificial channels and reclaimed islands at the confluence of the south-flowing Sacramento River and the north-flowing San Joaquin River, just east of where they enter Suisun Bay, an upper arm of San Francisco Bay. Extending in width more than 40 miles from Sacramento to Tracy, the Delta encompasses 1,600 square miles, receives runoff from four major rivers, drains over 40 percent of the State, and carries more water seaward than the Colorado River. The Delta provides habitat for numerous species of fish and wildlife; nearly half of the State's migrating waterfowl and shorebirds, and two thirds of the State's spawning salmon, pass through the Delta. Author William Fulton described the multiple functions served by the Delta for both ecological and economic purposes:

> The Delta is a crossroads for all of California. Its flush of fresh water contains almost half the runoff in the state, and helps forestall saltwater intrusion that would harm people and wildlife. The Delta contains vital shipping channels that serve long-established industrial ports in Martinez, Pittsburg, Stockton… It is a heavily used recreation area prized by fishing interests, boaters, and others. It is home to several towns, including at least two below sea level. Thanks to a system of levees constructed over a century, the Delta has hundreds of thousands of acres in farmland, including some 150,000 acres that lie below sea level. And finally, the Delta is a switching station for California's water. Most of the water used in the state – from municipal and federal dams to the east and state dams to the north – is stored, flushed, and pumped across the Delta to reach farm and urban customers to the west and south. Sixty percent of the state's drinking water travels through the Delta, along with water to irrigate almost half the fruits and vegetables in the United States.[2]

In the spring of 2007, the State saw the first voluntary shutdown of the SWP pumps in the Delta to protect fish. The goldfish-sized Delta smelt (*Hypomesus transpacificus*), a state- and federally-listed endangered species, and some other pelagic (open water) fishes have been in decline since the early 2000s for reasons that likely include the presence of invasive species, which have altered the basic food web in the Delta, and the impacts of toxins, in-Delta diversions, and water project operations. In 2007, SWP operational changes in the Delta consisting of 500,000 acre-feet were taken to help protect the endangered Delta smelt. Unfortunately, these actions did not result in an increase in the abundance of Delta smelt in the fall of 2007, suggesting that more than just water project operational changes in the Delta are needed to increase Delta smelt abundance. In addition, another pelagic fish, the longfin smelt, is now being considered for listing under the State Endangered Species Act. DWR states that a more comprehensive approach to address the decline in pelagic fish is needed.

The Delta smelt is considered to be an "indicator species." Because of its wide range and historically large numbers throughout the Delta, some believe its health and abundance serve to indicate the general health of the Delta as habitat for other species. Like the proverbial canary in a mine shaft, Delta smelt populations react quickly to degradations of water quality, indicating changes that may affect other species. In addition, smelt and other small fish in the Delta serve as the foundation for the food chain that supports larger species of fish and marine life, including striped bass, a popular fish for recreational fishermen. Populations of smelt have seriously declined over the last twenty years. From a population of 800,000 during the 1960s and 1970s, the smelt population has dropped to about 35,000 in the Delta. Of most immediate concern to conservationists, smelt and other small fish are in danger of being sucked into the large pumps that siphon water from the Delta into aqueducts that carry it to water customers located hundreds of miles to the south. During 2007, new Delta planning efforts – including the Delta Vision process established by Governor Arnold Schwarzenegger and the Bay/Delta Conservation Planning process – have reached important conclusions about the need to change the way water is conveyed across or around the Delta to both better protect fish and provide a sustainable and reliable water supply for the State. Those efforts are expected to continue into 2008 and beyond.

As noted above, the Sacramento-San Joaquin Delta is the largest estuary on the West Coast. It functions as the hub of California's water system, as a vital resource in the fishing and agricultural economies, serves as a recreational area,

2 Fulton, William. *The Reluctant Metropolis: the Politics of Urban Growth in Los Angeles*. Point Arena CA, Solano Press Books, 1997, pages 110-111.

and is home to millions of Californians. A 2007 report by the Public Policy Institute of California concluded that "most Californians rely on the Delta for something, whether they know it or not." Numerous water agencies rely on the State pumps in the Delta, and many would face water rationing within a few weeks if Delta supplies become unavailable. Regions of the State that depend on imported water from the Delta must consider the importance of this region for all Californians, and plan for contingencies in the event water supplies from the Delta are temporarily or permanently reduced due to competing demands.

As to the ability to convey source water to the desired point of availability, DWR reports that an uncertainty factor exists with respect to SWP operations, because they are closely regulated by Delta water quality standards established by the State Water Resources Control Board (SWRCB) and set forth in Water Rights Decision 1641. DWR also reports other factors of uncertainty due to the continuing unexplained decline in many pelagic fish species, including the Delta smelt since the early 2000's, and the legal challenges to SWP operation and on-going planning activities related to the Delta. Other uncertainties include future sea level rise associated with global climate change, which could increase salinity in the Delta and the risk of interruptions in SWP diversions from the Delta due to levee failures. The referenced litigation challenges are described in more detail below.

As to estimating the future demand for SWP water, DWR has identified uncertainty factors including population growth, water conservation, recycling efforts, other supply sources, and global climate change. In addition to the above-identified factors affecting water delivery reliability, DWR has reported other limitations and assumptions, all of which are explained in the *Draft State Water Project Delivery Reliability Report 2007*. This report has also identified the status of four major concurrent Delta planning efforts that are underway with objectives related to providing a sustainable Delta over the long-term. These planning efforts may propose changes to SWP operations, which in turn could affect SWP water supply availability. The planning efforts are the *Delta Vision*, the *Delta Risk Management Strategy*, the *CALFED Ecosystem Restoration Program Conservation Strategy*, and the *Bay-Delta Conservation Plan*. According to DWR, each planning effort could affect SWP and Central Valley Project operations in the Delta, and each is explained in detail in the *Draft State Water Project Delivery Reliability Report 2007*.

Recent litigation has had an effect upon the availability and reliability of imported SWP supplies. For example, in October 2006, plaintiff Watershed Enforcers, a project of the California Sportfishing Protection Alliance, filed a lawsuit in Alameda County Superior Court alleging that DWR was not in compliance with the California Endangered Species Act (CESA) and did not have the required state incidental take permit to protect the Delta smelt as part of DWR's pumping operations at the Harvey O. Banks Pumping Plant located near the town of Tracy (*Watershed Enforcers, et al. v. California Department of Water Resources, et al. Alameda County Superior Court No. RG06292124 [Watershed decision]*). In April 2007, the court agreed with the plaintiff and ordered a shutdown of pumping from the Delta if appropriate permits could not be obtained in 60 days. In May 2007, the DWR filed an appeal of the trial court's decision, which automatically stayed the decision pending the outcome of the appeal. At the same time, DWR entered into a Memorandum of Understanding with California Department of Fish and Game (CDFG) to jointly work with the appropriate federal agencies to develop a federal Biological Opinion that complies with CESA. During preparation of the new Biological Opinion, DWR committed itself to actions related to protecting the Delta smelt and other species through adaptive management provisions. Upon completion of this effort, DWR plans to submit a request to CDFG for a consistency determination under CESA that would allow for incidental take based on the new federal Biological Opinion.

On May 25, 2007, the U.S. District Court for the Eastern District, the Honorable Oliver W. Wanger, presiding, found that the 2005 United States Fish and Wildlife Service (USFWS) Biological Opinion for Delta smelt was not consistent with the requirements of the federal Endangered Species Act and must be rewritten. On August 31, 2007, Judge Wanger established interim operating rules to protect Delta smelt until the USFWS rewrites the Biological Opinion. The interim operating rules set in-Delta flow targets in Old and Middle Rivers from late December through June that will restrict CVP and SWP pumping in 2008 and until the Biological Opinion is rewritten. Judge Wanger's restrictions on CVP/SWP operations will last until a new Biological Opinion for Delta smelt is completed. The new Biological Opinion is expected to impose restrictions that may continue reduced pumping operations in the SWP/CVP until broader solutions are implemented for the Bay-Delta. Other implications are described below based on the best available current information.

In terms of short-term water supply availability, there have been short-term effects related to issues presented in the Watershed and Wanger decisions. There is also concern that the remedy adopted by the District Court could ultimately become part of the conditions in the new Biological Opinion and incidental take permit expected to be issued in the fall of 2008. These concerns, if they materialize, could limit the amount of SWP water that can be delivered to SWP contractors, including CLWA.

Governor Schwarzenegger directed DWR to take immediate action to improve conditions in the Delta. According to the Office of the Governor, the Governor is building on his Strategic Growth Plan, which consists of approximately $6 billion to upgrade California's water systems. The Governor has also directed the Delta Vision Blue Ribbon Task Force to develop a delta management plan. The Task Force has presented its findings and recommendations, and its strategic plan is due by October 31, 2008. The Bay-Delta Conservation Plan is also underway. This plan is intended to ensure compliance with federal and state Endangered Species Act requirements in the Delta. The $1 billion proposed in the Governor's comprehensive plan will be used to fund recommendations from both the Delta Vision Task Force and the Conservation Plan.

Over the long-term, water supply availability and reliability will continue to be assessed by DWR in DWR's biennial SWP delivery reliability reports. These reports necessarily take into account a myriad of factors in evaluating long-term water supply availability and reliability. These factors include multiple sources of water, a range of water demands, timing of water uses, hydrology, available facilities, regulatory restraints (including pumping constraints due to impacts on listed fish species), water conservation strategies, and future weather patterns. The Watershed and Wanger decisions highlight the regulatory restraints applicable to SWP supplies, which have impacted DWR deliveries of SWP supplies in the past, and could curtail such deliveries in the future.

Following the final court order issued in the Wanger decision, representatives of CLWA and the four local retail water purveyors met with Los Angeles County and City of Santa Clarita planning staff to coordinate water supply and land use planning activities for the Santa Clarita Valley. In addition, DWR has issued its *Draft State Water Project Delivery Reliability Report, 2007.* Based on this information, CLWA has determined that there are sufficient water supplies available for pending and future development within the CLWA service area for the foreseeable future through 2030, as set forth in the 2005 UWMP. The Valley's water suppliers are presently reviewing their projected service needs and water supply estimates, and will be jointly preparing an amended UWMP, beginning in 2009.

Water Conservation

Water conservation has become an increasingly important factor in water supply planning throughout California, especially in light of continuing drought conditions and the Delta issues described above. A monthly newsletter issued by Governor Arnold Schwarzenegger's office in January, 2008 underscored the State's concern about water availability:

> Today California has more than 37 million people with a water system built for half that, and we are seeing the consequences. Businesses and homes are facing mandatory reductions in water use, and new developments that would provide good-paying jobs have been delayed because local governments don't know if there will be enough water to go around.[3]

Adding to concerns about water supply are recent studies of the effect of climate change on precipitation rates and snowpack in the western United States. A 2007 study by scientists at the Scripps Institution of Oceanography showed that climate change from human activity is disrupting water supplies in the region. "Trends in snowpack, river runoff and air temperatures – three fundamental indicators of the status of the West's hydrological cycle – point to a decline in the region's most valuable natural resource, water, as population and demand grows in the West," according to a Scripps press release describing the study's conclusions.[4] Through extensive data analysis and multiple models, all of which yielded the same results, the study forecasted a serious water supply problem for those dependent on the Colorado River drainage, and substantial alterations to the hydrology of the Sacramento River Delta, home to many sensitive ecosystems and economically important wildlife. Although the Santa Clarita Valley does not use water imported from the Colorado River, this water source

3 State of California, Office of the Governor, External Affairs, Montly Newsletter January, 2008.
4 Scripps Institution of Oceanography/UC San Diego, "Climate Crisis in the West Predicted with Increasing Certainty," December 17, 2007. Available on-line at http://scrippsnews.ucsd.edu/Releases/?releasesID=856

is critical to portions of the Los Angeles basin served by the Metropolitan Water District of Southern California. Any reduction in Colorado River water availability is likely to affect demands for water from the State Water Project. The Colorado River basin is now in the eighth year of drought, and water levels in Lakes Mead and Powell are at only about 50 percent of capacity.

One of the greatest opportunities for conservation is reduction of landscape irrigation through greater efficiency and use of native, drought-tolerant plant materials. Grasses bred for use in lawns are not native to North America, and require a large amount of water to promote growth. Since the Santa Clarita Valley's annual precipitation is only about 13 inches per year, much of the water used for landscape irrigation must be imported. As much as 60 to 70 percent of the water used by residential customers is typically for landscape irrigation. Water conservation by residential customers through minimizing water-dependent landscaping and maximizing low-water use landscaping (xeriscape) could contribute significantly to ensuring that long term water needs are met in the Valley.

The term *xeriscape* was coined by the Denver Water Board in 1978 to mean "water conservation through creative landscaping". A well-designed xeriscape landscape can reduce yard maintenance by as much as 50 percent, and requires less fertilizer and pesticides. Watering efficiently and mulching can also save significantly on water usage. Xeriscape plants use just one tenth of the water that a lawn of green grass uses. Each lawn that is replaced with xeriscape plants can save up to 260 gallons of water per day.

Public agencies have an opportunity to set an example on water conservation in landscaping, by replacing water-thirsty turf with xeriscape on street medians and parkways, around public buildings, and on other public land that is not actively used for recreational purposes. CLWA has installed a demonstration garden adjacent to its administration building, and provides information on xeriscape landscaping techniques. In 2008, Los Angeles County adopted an ordinance limiting the amount of turf and requiring drought-tolerant landscaping on new development. Included in the ordinance was a list of drought-tolerant plants suitable for various climate zones within the County. Both the City and the County will show their commitment to wise water use through converting turf to xeriscape on new capital projects. Policies have been included in this element supporting these measures.

In other water conservation measures, CLWA and the retail water purveyors in the Valley have been aggressively implementing demand management measures and best management practices. Activities include water audits and repairs, public outreach, conservation pricing, residential plumbing retrofit, residential ultra low flush toilet replacement, large landscape conservation, and conservation programs for commercial, industrial, and institutional accounts. For new construction, the California plumbing code has instituted requirements that mandate installation of low-flow toilets and showerheads. CLWA estimates that conservation will result in a long-term reduction of water demand.

Water Recycling

State water policy identifies water recycling as a beneficial use of water, and recycled water is an important component of water management planning. The Sanitation Districts of Los Angeles County (LACSD) own and operate two water reclamation plants in the Valley, the Saugus WRP (No. 26) and the Valencia WRP (No. 32). Wastewater is treated at these plants to tertiary levels and discharged to the Santa Clara River. The primary sources of wastewater to the Saugus and Valencia WRPs are domestic. Together, the WRPs have a design capacity of 28.1 million gallons per day. Current plans call for recycled water from only the Valencia plant, located on The Old Road near Magic Mountain Amusement Park, to be used as a source of recycled water. Use of water from the Valencia WRP for landscaping purposes began in 2003, with deliveries to the Westridge Golf Course. Recycled water from the Valencia WRP has also been used by the City for landscape irrigation, and for construction applications via tanker truck.

The ability of CLWA to use recycled water is constrained by its rights to use the water available. CLWA has been approved to use 1,700 acre-feet per day of recycled water, but the ultimate recycled water use is governed by various laws, court decisions, and water rights of downstream users. Only "foreign" water, such as water imported from the State Water Project, can be used for recycling purposes.

Developers of the Newhall Ranch Specific Plan are also planning to construct a water recycling facility, and non-potable water from this source will be utilized for the Newhall

Ranch development. The proposed facility would be located south of SR-126 at the western edge of the project site, with an ultimate capacity of 6.8 million gallons per day. Effluent from the proposed WRP would be used to meet nonpotable water demand within the project area. The plant is projected to produce approximately 5,000 acre-feet per year on average.

Currently, CLWA serves approximately 448 acre-feet per year of recycled water to the Valencia Water Company for irrigation purposes at Westridge Golf Course and other sites. CLWA has identified a number of potential users of recycled water in the future. Demands for recycled water are seasonal, with the highest demands occurring during the hot, dry summer months when irrigation requirements are greatest. CLWA estimates that the total potential annual recycled water demand that is cost effective to serve is approximately 17,400 acre-feet per year. Implementation of the recycled water system is expected to occur over the next 25 years. CLWA has identified various strategies to encourage the use of recycled water, including rate reductions and working with the City to mandate recycled water use for certain applications.

AB 1881

The California State approved Assembly Bill 1881, which requires the Department of Water Resources to create a model ordinance to improve the efficiency of water use in new and existing urban irrigated landscape in California. A draft ordinance was created and underwent a public review process by public and private agencies. Local agencies were required to adopt the ordinance no later than January 1, 2010. The County and the City of Santa Clarita will pursue meeting AB 1881 requirements, including the implementation of water efficient irrigation and landscaping on all future developments.

Water Quality

The federal Clean Water Act was adopted to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The Act directs each state to establish water quality standards for all "waters of the United States." The Environmental Protection Agency has delegated responsibility for implementation of portions of the Clean Water Act, including water quality control planning, to the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCB). The SWRCB establishes statewide policies and regulations for implementing water quality control programs. The RWQCBs develop and implement Water Quality Control Plans (Basin Plans) that consider regional beneficial uses, water quality characteristics, and water quality problems. Each Basin Plan also provides strategies and implementation plans for the control of pollutants, remediation of pollution, monitoring, and assessment of the region's waters.

The National Pollutant Discharge Elimination System (NPDES) Program was established in the Clean Water Act to regulate discharges of pollutants into surface waters of the United States. Both point discharges (such as a municipal or industrial discharge at a specific location or pipe) and nonpoint source discharges (such as diffuse runoff of surface water from streets and parking lots) are regulated by the NPDES Program. In addition, construction activities which may result in water-born erosion from grading or stockpiling are regulated through various techniques called "best management practices." Water quality management plans and stormwater pollution prevention plans are required for development projects to meet the requirements of the NPDES Program to maintain water quality.

Surface water quality within the planning area is affected by a variety of discharges from both point and nonpoint sources. Wastewater treatment plant effluent is the largest and most common point-source discharge. Urban runoff, erosion, agricultural runoff, and other natural causes are common nonpoint sources. Pollutants from both point and nonpoint sources include dissolved and suspended solids, oil, grease, nutrients, metals, bacteria, and pesticides.

The Santa Clarita Valley planning area is within the hydrological areas covered by the 1994 Water Quality Control Plan for the Santa Clara River Basin (California Department of Water Resources Hydrological Unit No. 403.51). Portions of the Santa Clara River watershed have been identified as an "impaired water body" by the SWRCB because waters in these areas exceed adopted standards for various pollutants. Pollutants of concern include chloride, coliform, ammonia, nitrates, nitrites, and various organics. In 2005, the Upper Santa Clara River Chloride Total Maximum Daily Load (TMDL) became effective, outlining a 13-year plan to reduce chloride levels in the river. Chloride sources include SWP water imported into the Valley for drinking water, reclaimed water from the Valencia and Saugus WRPs, and domestic sources (including water softeners and salt-water pools). The use of residential self-regenerating water softeners installed prior to 2003 is the most significant controllable source

of chloride entering in to the community sewer system, accounting for approximately 30 percent of all chloride in the discharge. The WRPs have not been designed to remove chloride. Although installation of new automatic water softeners was prohibited in 2003, it is estimated that thousands of self-regenerating water softeners are still in use within the Santa Clarita Valley Joint Sewerage System. The Sanitation District has initiated a public awareness and education program, financial incentives for removal of water softeners, and a voluntary sales ban of salt and water softeners in local business. In 2007, the Sanitation District entered into an agreement with a water softener provider to remove nearly 600 rented water softeners from Valley residences in order to protect water quality. If salt levels discharged into the river do not decrease due to these compliance efforts, the Sanitation District may have to install additional costly treatment equipment, resulting in higher rate charges to sewage customers. A referendum proposed by the Santa Clarita Valley Sanitation Districts of Los Angeles County to ban existing water softeners was passed in November 2008.

Both the County and the City are working closely with the SWRQCB to meet requirements for the TMDL, through programs to provide pro-active public education and outreach, incentives for residents and business owners, and implementation of new technologies. A policy has been included in this element supporting cooperative efforts to address TMDL requirements, in order to improve water quality in the Santa Clara River.

To ensure drinking water quality of SWP water, CLWA has two surface water treatment plants that eliminate microbial contaminant, salts, minerals and algae. According to the 2005 UWMP, groundwater from the East Subbasin does not have microbial water problems. Parasites, bacteria, and viruses are filtered out as water percolates through soil, sand and rock on its way to the aquifer. However, disinfectants are added to local groundwater when it is pumped by wells to protect public health. All groundwater used for potable water meets or exceeds drinking water standards.

Perchlorate contamination emanating from the former Whittaker-Bermite site in the central portion of the Valley has been detected in the Saugus formation, and to a lesser extent, in the Alluvium formation in the East Subbasin. As discussed in the 2005 UWMP, Chapter 5 and Appendix D, there has been extensive investigation of the extent of perchlorate contamination, which, in combination with groundwater modeling, has led to the current plan for integrated control of contamination migration and restoration of impacted pumping (well) capacity.

The short-term response plan for the protection of other alluvial wells, down gradient from the Whittaker-Bermite site, will be to promptly install wellhead treatment to ensure adequate water supplies. This plan complements the longer-term source control actions being undertaken by the Whittaker-Bermite property owner under supervision of the State Department of Toxic Substances Control (DTSC) to address perchlorate contamination in the northern alluvium (to the north of the former Whittaker-Bermite site). The long-term plan also includes the CLWA groundwater containment, treatment and restoration project to prevent further downstream migration of perchlorate, the treatment of water extracted as part of the containment process, and the recovery of lost local groundwater production from the Saugus Formation.

There are four Saugus wells contaminated by perchlorate. The four contaminated wells consist of one owned by Newhall County Water District, two owned by Santa Clarita Water District, and Valencia Water Company well 157, which has been sealed and abandoned. These four wells represent a total of 7,900 gallons per minute of pumping capacity (or full-time source capacity of about 12,700 acre-feet per year) inactivated due to perchlorate contamination.

Low Impact Development

In the past, traditional planning and design techniques have often focused on particular characteristics of a building site and the immediate area, rather than on the relationship of each new development project to the surrounding regional environment. Even more holistic planning concepts such as new urbanism and smart growth have often overlooked the implications of a specific development project on environmental conditions in the greater watershed. Planners now understand that development decisions cannot be limited to site specific conditions, but must be made in consideration of broader environmental conditions such as regional water quality.

The construction of impervious surfaces such as roads, parking lots, and rooftops leads to the degradation of water quality by increasing runoff volume, stream sedimentation and water acidity, altering regular stream flow and watershed hydrology, and reducing groundwater recharge. Accord-

ing to the EPA, a one-acre parking lot produces a runoff volume almost 16 times as great as would an undeveloped meadow of the same size.

The concept of Low Impact Development (LID) was created to ensure that new development is designed in consideration of overall environmental conditions, including regional water quality. LID is a land-use planning approach that incorporates "green infrastructure" concepts such as zero runoff, rainfall harvesting, groundwater recharge, biofiltration, native landscapes, green streets, and other measures to promote water quality protection in new development. The goal of LID is to protect a community's natural, pre-development water flow in order to minimize ecological impacts of urbanization.

The LID concept was created in the early 1990's in Maryland, with support from the U. S. Environmental Protection Agency, to improve water quality in Chesapeake Bay. LID was designed to provide cost-effective alternatives to conventional stormwater management, which is typically designed to transport heavily polluted stormwater and urban runoff through pipes and concrete channels as quickly as possible into larger regional water bodies. LID principles were developed to control runoff at the source. According to information from the Low Impact Development Center, basic planning principles include the following:

1. Stormwater management. In LID, stormwater is managed as in a natural system, by creating permeable surfaces to infiltrate stormwater and urban runoff into the underlying soil and reduce the amount of runoff from impervious surfaces. Design measures to manage stormwater at the source include trenches, drainfields, dry wells, and bio-retention areas. Rain gardens are shallow depressions filled with soil, sand and plants that retain, filter, and treat stormwater. Filter strips and bioswales provide pretreatment before waters an infiltrated area. Constructed wetlands are designed to remove pollutants from runoff and provide habitat and recreation value. Vegetated swales move runoff to infiltration systems, slow the erosive velocity, and filter pollutants.

2. Urban runoff reduction. Urban runoff during dry weather is largely the result of too much water for landscape irrigation, and washing of driveways and sidewalks. This runoff mixes with fertilizer, pesticides, pollutants on roadways, and other contaminants to create some of the most polluted water entering creeks and rivers. LID measures include irrigation control and the use of native and compatible plant species that require less water.

3. Site design and circulation. Minimizing the amount of asphalt and other impervious road and parking surfaces in site design and circulation decreases the amount of runoff and pollutants, while reducing both infrastructure and maintenance costs. Modifications to conventional design to reduce impervious surfaces area includes reduced street widths, reduced parking, use of porous materials in driveways and parking areas, and the use of traffic calming measures that include stormwater capture components. Mixed use development which allows pedestrian circulation and incorporates green belts, conserves open space, and protects natural features will also protect water quality.

Policies have been included in this Element to require LID techniques in the design of both private development and capital projects, for the purpose of managing stormwater at the source, enhancing surface water quality, reducing runoff volumes, and economizing on infrastructure costs for drainage systems and treatment facilities. In October 2008, the County Board of Supervisors adopted a LID ordinance.

VII. BIOLOGICAL RESOURCES

Biological Setting

The Santa Clarita planning area encompasses the Santa Clara River Valley, the east extension of the Santa Susana Mountains, the western reaches of the San Gabriel Mountains, and the southern slopes of the Sierra Pelona range. Because of the range of ecosystems found in this geographic setting, the planning area contains a wide variety of natural vegetation types. Approximately 49 percent (237 square miles) of the planning area is located within National Forest lands. Predominant vegetation within National Forest lands include mixed chaparral with hardwood and conifer forests at higher elevations, and riparian vegetation along stream channels. Much of the undeveloped portions of the Valley

floor are vegetated with coastal scrub interspersed with annual grasslands. Around and east of Agua Dulce, desert scrub components and scattered junipers are found.

Wildlife within the planning area is also diverse. River channels and open upland areas of the planning area provide habitat for movement and foraging, as does the adjacent National Forest land. Species of bats, rodents, rabbits, weasels, badgers, skunks, raccoons, fox, bobcat, black bear, and coyote are known to inhabit canyons throughout the planning area.

Various habitats within the planning area also support bird diversity for resident, migratory, and seasonal species. Numerous species of raptors, sparrow, quail, hummingbirds, swallows, larks, and owls have been identified, along with such federal and State special status species as Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and Least Bell's Vireo (*Vireo bellii pusillus*). The flycatcher typically occupies the unincorporated County portion of the planning area near Castaic Creek just west of the City of Santa Clarita boundary, while the vireo is found in local riparian habitats.

Amphibians and reptiles are abundant and relatively diverse within certain portions of the planning area. Snakes, toads, frogs, lizards, and salamanders are primarily found along the Santa Clara River and its tributaries, as well as other riparian areas. The Unarmored Threespine Stickleback (*Gasterosteus aculeatus williamsoni*), a Federal and State-listed endangered species, has also been identified in the planning area.

As one of the last free-flowing natural riparian systems left in southern California, the Santa Clara River supports a diversity of organisms by providing breeding sites, traveling routes, and other resources for wildlife. Protection of the watershed for habitat preservation is a key conservation goal. During the history of settlement and resource extraction in the Santa Clarita Valley, the watershed has been damaged repeatedly by human activities. The rupture of the St. Francis Dam in March, 1928 sent a 180-foot high wall of water crashing down San Francisquito Canyon to its junction with the Santa Clara River, sweeping away structures, farms, and people in its path as well as wildlife habitat. Mining activities have degraded habitats through pollution of surface and groundwater, crushing activities, roads, pipelines, and other infrastructure constructed within the watershed. Agriculture has generated stormwater runoff that impacts surface and groundwater quality with increased salts, nitrogen, and pesticides. Off-road vehicle use within the watershed damages wildlife directly as well as through destruction of habitat and introduction of exotic and invasive plants. Stormwater drainage systems have changed the path and rate of flow for water entering the river, necessitating the construction of concrete banks for stabilization that impact groundwater recharge. Many of the water conservation policies contained in this element, including water conservation, promoting infiltration through pervious surfaces, use of native landscaping, limiting use of invasive landscape species, and acquisition of open space in the watershed for conservation purposes, will also protect the quality of the Santa Clarita Watershed for habitat conservation purposes.

Sensitive Species

Sensitive biological resources are those habitats or species that have been recognized by federal, State, and/or local agencies as being endangered, threatened, rare, or in decline throughout all or part of their historical distribution. Numerous sensitive plant and animal species and communities have been identified within the planning area, especially within National Forest lands (see Figure CO-4). Sensitive communities include southern coast live oak woodlands, valley oak woodland, southern mixed riparian, southern riparian scrub, sycamore alder riparian woodland, southern willow scrub, big cone spruce-canyon oak, and native grassland. Vernal pools have also been identified on Cruzan Mesa, in Plum Canyon, and east of Interstate 5, within the Fair Oaks Ranch and Golden Valley Ranch area. The federally endangered Least Bell's vireo and Southwestern Willow Flycatcher depend on nesting and foraging habitat provided by vegetation communities within the planning area. Riparian habitats along the Santa Clara River, Soledad Canyon, Bouquet Canyon, and San Francisquito Canyon support the endangered Unarmored Threespine Stickleback.

Habitat for the following sensitive species is known to occur within the planning area or in forest lands adjacent to the planning area, which should be protected from adverse impacts of development:

- Gnatcatcher, coastal California (*Polioptila californica californica*);

- Frog, California red-legged (*Rana aurora draytonii*);
- Toad, arroyo (arroyo southwestern) (*Bufo californicus microscaphus*);
- Barberry, Nevin's (*Berberis nevinii*);
- Stickleback, unarmored threespine (*Gasterosteus aculeatus williamsoni*); and
- Flycatcher, southwestern willow (*Empidonax trailli extimus*).

Significant Ecological Areas

The County first began to inventory biotic resources and identify important areas of biological diversity in the 1970s. These biologically important areas, such as the Santa Clara River, have historically been identified in the General Plan and Santa Clarita Valley Area Plan. The primary mechanism used by the County to conserve biological diversity is a planning overlay called Significant Ecological Areas (SEA). SEAs are defined as ecologically important land and water systems that are valuable as plant or animal communities, often important to the preservation of threatened or endangered species, and conservation of biological diversity in the County. The SEA overlay, along with the SEA Conditional Use Permit process, are referred to as the SEA Program, which allows the County to implement its biotic resource goals through land use regulations and biological resource assessments.

Conservation of the County's biotic diversity is the main objective of the SEA Program, and connectivity between important natural habitats plays an important role in maintaining biotic communities. The preservation of large biologically diverse areas is also important because new species may still be found within a few miles of major urban centers, such as the Xylotrechus hovorei, a beetle recently discovered near the Placerita Nature Center. Within the Santa Clarita Valley, the County has designated the following SEAs, as shown on Figure CO-5. A more comprehensive description of the County's SEAs is contained in an Appendix of this Area Plan.

Cruzan Mesa Vernal Pools SEA

The Cruzan Mesa Vernal Pools SEA lies in the southeastern end of the Liebre Mountains, north of the Santa Clara River and east of Bouquet Canyon. The SEA boundaries encompass the watershed and drainages of the Cruzan Mesa and Plum Canyon vernal pools, considered as a single ecosystem within the SEA. Vernal pools, which are rare in Southern California and extremely rare in Los Angeles County, form seasonally in shallow, closed basins, usually where a lens of heavy clay soil holds surface water following rainfall events.

Santa Felicia SEA

The Santa Felicia SEA includes a variety of topographic features and habitat types. The orientation and extent of the SEA encompasses the surface and subsurface hydrology of the Santa Felicia watershed, from its headwater, tributaries, and basin to the point at which it exits Los Angeles County. The northernmost portion of the SEA is within the Angeles National Forest. Capturing the watershed tributaries, the eastern boundary follows a predominate ridgeline, the western boundary is the county border and the southern boundary captures two other small tributaries that feed the Santa Felicia, to encompass the entire watershed that ultimately drains into Lake Piru in Ventura County.

Santa Clara River SEA

The Santa Clara River SEA encompasses the entire Los Angeles County reach of the Santa Clara River, primarily within unincorporated areas of Los Angeles County. The Santa Clara River SEA covers the length of the river and with the watershed extensions encompasses a wide variety of topographic features and habitat types. The orientation and extent of the SEA also consists of the surface and subsurface hydrology of the Santa Clara River, from its headwater tributaries and watershed basin to the point at which it exits Los Angeles County jurisdiction.

Santa Susana Mountains/Simi Hills SEA

The Santa Susana Mountains/Simi Hills SEA is located northwest of the San Fernando Valley within unincorporated areas of Los Angeles County and an incorporated area of the City of Los Angeles west of Chatsworth. The area is south of State Route 126 and the Santa Clara River, west of Interstate 5, and includes much of the Santa Susana Mountains in the north, the Santa Susana Pass, Chatsworth Reservoir, and the eastern portion of the Simi Hills in the south.

Valley Oaks Savannah SEA

The Valley Oaks Savannah SEA is located on the west side of Interstate 5, north of Pico Canyon. The area contains one of the last remaining stands of valley oak in the Santa

Clarita Valley and a mixture of plants from the coastal sage scrub and chaparral communities, typical of those found in the Santa Clarita Valley.

While SEAs are not preserves, they are areas where the County deems it important to facilitate a balance between sensitively designed development and resource conservation. Development in SEAs within the County areas requires an additional level of biological review by the Significant Ecological Area Technical Advisory Committee and approval of a Conditional Use Permit for SEAs. These requirements ensure that development is designed to be highly compatible with the biological resources present in a manner that is consistent with the overall intent of the SEA Program. Within the City, any development proposal in an SEA is required to include a biological study evaluating impacts on biological resources from the proposed development, and appropriate mitigation measures. In addition, the City's Unified Development Code requires that any such project be designed to be compatible with biological resources, maintain watercourses and water bodies in a natural state, maintain wildlife corridors, preserve adequate buffer areas or barriers between development and natural resources, and ensure that roads and utilities are designed to mitigate impacts to biological resources

Wildlife Corridors

Fragmentation of open-space areas by urbanization creates "islands" of wildlife habitat. In the absence of linkages that allow movement between habitat areas, some wildlife species will not be able to maintain viable populations. Wildlife corridors provide connections between habitat areas that allow animals to move from one habitat area to another. Maintaining wildlife corridors helps to compensate for the isolation and fragmentation of habitats resulting from natural and man-made alterations to the environment; they link habitat areas that may otherwise be separated by rugged terrain, changes in vegetation, or human disturbance. Wildlife use corridors to move between remaining habitat areas in order to mate and replenish depleted populations, to escape from fire and other natural or manmade hazards, and to seek food, water, and other necessities.

The Santa Clara River Enhancement and Management Plan Study (SCREMP) identified several key movement corridors within the planning area. These corridors are generally located in undisturbed canyon and ravine stream habitat areas. The preservation of these areas is essential for maintaining the wildlife diversity within the planning area.

The Santa Monica Mountains Conservancy (SMMC) and the Mountain Recreation and Conservation Authority have also identified wildlife corridors in the Santa Clarita Valley, including Elsmere Canyon, Towsley Canyon, Weldon/Bee Canyon, crossings along State Route 14 near Whitney Canyon, and crossings between Canyon Country and Sulphur Springs. Elsmere Canyon is an integral part of the Rim of the Valley Trail Corridor and Wildlife Corridor, linking the Santa Clarita Woodlands, Whitney, and Placerita Canyons. The Rim of the Valley Trail Corridor traverses the Santa Monica, Santa Susana, and San Gabriel Mountains.

As mitigation to a major transportation project, the San Gabriel/Santa Susana Wildlife Corridor and Open Space Acquisition Project identified key wildlife linkage corridors within the mountainous areas along the high occupancy vehicle lanes proposed for State Route 14 between Newhall Avenue and Sand Canyon Road. The corridors include the Whitney Canyon Movement Route and the highway underpass known as the Los Pinetos undercrossing. These corridors link significant coastal sage scrub, oak woodland, and riparian woodland and scrub habitats. To date, the City of Santa Clarita has secured and preserved more than 1,000 acres of wildlife corridor lands.

A wildlife corridor linkage design has been developed for the San Gabriel-Castaic Connection by the South Coast Wildlands, in partnership with the Resources Agency, the U. S. Forest Service, California State Parks, National Park Service, SMMC, and several other agencies. The linkage design provides for a wildlife corridor connecting the two sections of Angeles National Forest within the planning area. According to a report on this linkage design prepared by South Coast Wildlands:

> The final Linkage Design has several branches to accommodate diverse species and ecosystems functions. The northwest branch is dominated by coastal sage scrub and chaparral and encompasses all or portions of Bee, Spring, Tapia, Tick, and Mint Canyons. It serves most of the focal species, including puma, mule deer, Pacific kangaroo rat, and California thrasher. The eastern branch connects a series of desert scrub and juniper woodland habitats, thereby linking habitat

for species such as American badger, burrowing owl, and Bear sphinx moth that prefer open habitat that are prevalent in desert plant communities. The third distinct branch of the Linkage Design follows the Santa Clara River and Soledad Canyon and provides large stepping-stones of habitat for semi-aquatic species, such as the western pond turtle, two-striped garter snake, and mountain kingsnake; it also serves a suite of aquatic and riparian-dependent species (e.g. Unarmored three-spine stickleback, Santa Ana sucker, Arroyo chub, California red-legged frog, Arroyo toad) not addressed by our analysis. State Route 14 and Sierra Highway are major transportation routes and pose the greatest barriers to wildlife movement. Wildlife crossings should be located near the confluence of Spring Canyon, Bee Canyon, and the Santa Clara River; in Agua Dulce Canyon, and at both places where Escondido Creek crosses the freeway.

The City of Santa Clarita has purchased several parcels within the Linkage to protect as open space, and will continue to seek ways to protect these important wildlife corridors.

National Forest Lands

The Angeles National Forest forms the northern and southern border of the Santa Clarita Valley planning area. In terms of planning for future development, the National Forest is an important part of the envisioned greenbelt surrounding the Valley. The mission of the U. S. Forest Service is to "sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations." In 2005, the Forest Service updated its Land Management Plan for the Angeles National Forest, which was amended by a Record of Decision in 2006 selecting Alternative 4(a) as the Land Management Plan that will govern land use and resource management decisions in the Angeles National Forest for the next 10 to 15 years. The final Land Management Plan identified four major threats to the health of the forest:

1. Fire and fuels – decades of fuel buildup, coupled with drought and disease, have created a situation that poses a threat to the lives and property living in the communities of southern California. Fire is a fact; it is not a question if fires will burn, rather, it is a question of when and how intensively.

2. Invasive species – invasive species are spreading at alarming rates, adversely affecting people and the ecosystems of the Angeles National Forest.

3. Loss of open space – The loss of open space (also known as "fragmentation") has three aspects that challenge effective land management: (1) habitat fragmentation, (2) ownership fragmentation, and (3) use fragmentation.

4. Unmanaged recreation – The phenomenal increase in the use of national forests for recreational activities raises the need to manage most forms of recreation, particularly the use of off-highway vehicles (OHVs), including all-terrain vehicles (ATVs), snowmobiles, sport utility vehicles (SUVs), off-highway motorcycles, motorized trail bikes, and similar means of transportation.

In response to these identified threats, the Land Management Plan contains strategies to limit motorized public access to designated areas of the forest; limit development to reduce the loss of open space and retain the undeveloped character of the forest; protect adjacent communities from wildfire; and emphasize plant and wildlife management in all program areas, including a reduction in invasive species.

It is recognized that effective forest management requires that City and County residents be good forest neighbors. Of particular importance for City and County dwellers is the area known as the Wildland/Urban Interface, in which urban and rural development abut the forest boundaries. In these areas fuel modification and fire protection will be of prime importance to reduce fire hazards and potential damage to lives and property from spreading forest fires. These areas are also critical to limiting the spread of invasive species into forest areas, and limiting unauthorized motor vehicle use within the forest. City staff reviewed and provided extensive input on the Land Management Plan when it was being prepared, and has reiterated the City's commitment to ensuring that the forest is protected from off-road vehicles, invasive species, and over-development.

Urban Forestry Program

Planting trees in urban environments delivers substantial economic, environmental, and aesthetic benefits. Trees absorb rain, reducing runoff and decreasing stormwater

impacts on drainage facilities. Trees provide windbreaks and shade that lower energy costs in nearby buildings. Green landscapes reduce carbon dioxide and absorb air pollutants, improving air quality. Attractive, tree-lined streets improve property values. In terms of biological resources, trees provide habitat for birds and other wildlife.

The City of Santa Clarita maintains an Urban Forestry program as part of its Public Works Department. The Urban Forestry Division maintains all of the City's street, park, trail, and facility trees, while planting many more each year. The Division is responsible for the maintenance of 50,000 trees, reforestation, weed abatement, the Neighborhood Leaf Out Program, the Arbor Day celebration, and tree removal. Through its Neighborhood Leaf Out Program, the Division provides education and public outreach to encourage tree planting throughout the City. The Division also maintains recommended tree planting lists. Through these efforts, the City has been recognized as a Tree City USA award winner for many years. The City has long recognized the value of a healthy urban forest, and will continue to promote this program.

Development Impacts on Biological Resources

Urban development can have an impact on biological resources by reducing habitat and foraging grounds, increasing nighttime lighting and noise, causing air and water pollution, changing ambient air and water temperatures, introducing invasive species and household pets into native habitats, and generating off-road vehicle use, among other impacts. Although not all of these impacts can be reduced to insignificant levels within urbanized areas, it is possible to minimize adverse impacts on the natural environment through good planning and sustainable development practices.

Several strategies for new development have been recommended by the U. S. Green Building Council as part of its Leadership in Energy and Environmental Design (LEED) program. The LEED Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

With respect to minimizing impacts of new development on biological resources, LEED recommends the following measures:

- Provide a high ratio of open space to development footprint to promote biodiversity. LEED recommends vegetated open space equal to 20 percent of the project's site area, which may include vegetated roof areas ("green roofs"). Pedestrian-oriented hardscape areas may also be included, provided they use permeable paving or include vegetated open space. Wetlands, vegetated swales, and ponds may also be included to meet open space requirements. Open space provides habitat for vegetation, which in turn provides habitat for local wildlife. Even small open spaces in urban areas can provide refuges for wildlife populations, which have become increasingly marginalized. Plants that specifically support local species such as insects and other pollinators can help sustain populations up the food chain.

- Use vegetated open space to reduce the urban heat island effect, increase stormwater infiltration, and provide the human population on the site with a connection to the outdoors.

- Provide connections between vegetated open space areas within a site and between adjacent sites; avoid isolated landscaped areas surrounded by paving to the extent possible.

- Minimize nighttime lighting to the extent possible, while maintaining adequate security lighting. Outdoor lighting is necessary for illuminating connections between buildings and support facilities such as sidewalks, parking lots, and roadways. However, light trespass can affect the nocturnal ecosystem and light pollution limits night sky access. Establishing time limits and maximum illumination levels for nighttime hours when businesses are closed is recommended to cut light pollution.

- Prohibit new development within 100 feet of any wetlands as defined by federal, state or local regulations, or within 50 feet of a water body, including lakes, rivers and streams; or within any areas identified as habitat for threatened or endangered species, including wildlife corridors.

- For new development proposed on previously undeveloped sites ("greenfields"), perform a site survey to identify biological resources, and plan for resource protection in the site design. On sites where habitat areas are to be protected, establish disturbance boundaries during construction; delineate stockpiles, lay- down, recycling and disposal areas. Use paved areas for staging, and erect construction fencing around the drip line of existing trees to protect them from soil compaction by construction vehicles.

- Minimize site disturbance to the extent feasible and restore previously degraded areas to their natural state. Preserve and enhance natural site elements, including water courses, trees and native vegetation, where possible.

- Choose appropriate native or adapted plant materials, and prohibit invasive or noxious weed species. Native and adapted plants require minimal or no irrigation following establishment; do not require active maintenance such as mowing or chemical inputs such as fertilizers, pesticides or herbicides; and provide habitat value and promote biodiversity through avoidance of monoculture plantings. Replace turf-grass with native or adapted plantings to promote biodiversity and habitat.

- Reduce the amount of site area devoted to paving when not functional or necessary, and replace paving with landscaped areas.

- Use landscaping to shade buildings and impervious areas, decrease cooling loads and energy expenditures, and reduce the heat-island effect. The term heat island refers to urban air and surface temperatures higher than nearby rural areas. Many cities have air temperatures up to 10 degrees (Fahrenheit) warmer than the surrounding natural landscape. Heat islands form as cities replace natural landscape with pavement, buildings, and other infrastructure. The heat island effect can be lowered by reducing the amount of surface parking lots and by replacing heat-absorbing surfaces with plants, groundcover, small trees, and green roofs. Some cities have developed parking areas below green space to reduce the overall heat island effect and provide for greater pedestrian connectivity.

- Local landscape ordinances should be revised to avoid any landscape requirements that are not sustainable and horticulturally sound. "No lawns" should become the norm.

- Minimize erosion to protect habitats and reduce stress on natural water systems by preserving vegetation and limiting development on any slopes greater than 15 percent.

Issues for biological resource protection within the planning area will continue to be the reduction of open space and habitat due to urbanization; the separation of habitat areas into disconnected, isolated islands; and other impacts of development. However, measures such as those listed above can be taken to make urban development less harmful to the natural environment. Policies have been included in this element to protect biological resources as described in this section.

VII. CULTURAL & HISTORICAL RESOURCES

Historical Overview of the Santa Clarita Valley

The earliest physical evidence of human occupation in the Upper Santa Clara River area dates from 7,000 to 4,000 years ago, and was recovered from two sites near Vasquez Rocks. The identity of the area's first inhabitants is unknown. The Tataviam peoples, Uto-Aztecan speakers of Shoshonean descent, began to reach the planning area in approximately A. D. 450. They were described as a distinct linguistic group when they were first encountered in 1776 by Spanish explorer Pedro Fages.

The Tataviam lived primarily on the upper reaches of the Santa Clara River, east of Piru Creek and extending from the Antelope Valley to the San Gabriel Mountains. Archaeological data indicate that subsistence patterns and ritual practices were similar to neighboring Chumash and Gabrielino culture groups; these groups were hunter-gatherers, subsisting on acorns, yucca, juniper berries, seeds, and small game. Tataviam village sites with known names were located at San Francisquito, Piru, Camulos, Castaic Reservoir, Piru Creek, Elizabeth Lake, and in the Newhall environs; additional archaeological sites have been recorded along the Santa Clara River and Vasquez Rocks. The Native American Heritage Commission (NAHC) has identified three sites of Native American cultural significance near

the Santa Clara River including CA-LAN-361, CA-LAN-366, and CA-LAN-367. Many of the place names in the valley, such as Castaic, Piru, Camulos, and Hasley, reflect a Tataviam linguistic origin. One site of extreme cultural significance, Bowers Cave near Val Verde, yielded one of the most significant assemblages of American Indian religious and ceremonial artifacts ever found in North America. Discovered in 1884 by two local boys, many of the cave's cultural artifacts were removed, but most found their way to the Native American collection in the Peabody Museum of American Ethnology at Harvard University.

Spanish explorer Gaspar de Portola's chronicles of his 1769 expedition from San Diego to Monterey provide the first European documentation of the Santa Clarita region. Father Juan Crespi, who accompanied Portola, wrote that the peaceful Tataviam offered them food and respite. The expedition passed north through the San Fernando Valley to Newhall and on to the Castaic Junction area, then west along the Santa Clara River to San Buenaventura, and from there north to Monterey. The trail blazed by Portola became known as El Camino Viejo (The Old Road). In 1772, Pedro Fages, commander of the Presidio of San Diego, traveled through Castaic Junction and Soledad Canyon in search of army deserters.

After establishment of the Mission San Fernando in 1797, much of the Santa Clarita Valley was used by the Mission for ranching. Known as the Estancia de San Francisco Xavier, the estancia buildings were constructed by Tataviam workers in 1804 near the confluence of Castaic Creek and the Santa Clara River. In later decades the buildings fell into disrepair and were vandalized; in 1937 their remnants were bulldozed into the ground. The archaeologically rich midden remains a significant and protected site.

Following the establishment of the Mission San Fernando, the native peoples of the Santa Clarita Valley were deprived of their lands and relocated to the mission grounds where they were baptized and forced to work in the mission fields and vineyards. At the Missions San Fernando and San Gabriel, they intermarried with other similarly dislocated tribes.

With the Mexican Revolution of the 1820s and 1830s came secularization of the former mission lands. In 1839 the Rancho San Francisco, comprising 48,000 acres of the Santa Clarita Valley, was granted to Ignacio Del Valle, mayor of Los Angeles and later a state legislator. However, falling cattle prices and financial woes brought the ranch land back on the market in the 1860's, where it again changed hands several times before being purchased on January 15, 1875 by Henry Mayo Newhall.

The first documented discovery of gold in California occurred in Placerita Canyon in 1842, near what is now called the Oak of the Golden Dream. Nearly 1,300 pounds of gold was retrieved from Placerita Canyon between 1842 and 1847. Anecdotal evidence has been found indicating that placer gold mining occurred in Hasley Canyon and other areas of the Valley as early as the 1820's.

Various mineral resources discovered throughout the Valley spurred development of mining camps and settlements. San Francisquito Canyon was one of the first canyons to be mined and settled. By 1860 copper was being mined in Soledad Canyon, and a small town developed near the head of Williamson's Pass. Both copper and gold bearing quartz veins were mined into the 20th Century, although the rush was over by about 1875. In addition to gold, the local canyons yielded silver, lead, borates, manganese, titanium, gravel, agates, and other gemstones and minerals.

The upper Santa Clarita Valley was the first location of oil drilling in Southern California, after oil seeps were discovered by American settlers in Pico Canyon in 1865. (The seeps had been known for centuries to the Tataviam, who had used the raw asphaltum for waterproofing and other purposes.) Mexican General Andres Pico and other investors sold their oil fields in Pico Canyon in 1875, along with the oil company they had formed to extract and process the oil. Their California Star Oil Company (CSO) later became part of the Standard Oil Company of California. CSO's new superintendent, Charles Alexander "Alex" Mentry, laid the groundwork for an oil town that became known as Mentryville, after deepening an older well, Pico No. 4, to produce a "gusher" on September 26, 1876. By the 1880s there were nearly 100 families living in Mentryville, which included Mentry's 13-room mansion known as the "Big House." Pico No. 4 became the longest-running oil well in the world before it was taken out of service in 1990, having pumped crude oil almost continuously for 114 years. In 1976 the well site was dedicated as a California State Historic Landmark, and a plaque now marks the historic oil well's location. Although the Big House, the 1885 schoolhouse and certain other buildings remain, most of Mentryville's

early homes and company structures were dismantled or removed in the early 20th Century, ravaged by fire, or destroyed by the 1994 earthquake. The site is now overseen by the Santa Monica Mountains Conservancy, which has begun renovation of the Big House.

The completion of the Southern Pacific Railroad through the area in 1876, along with the development of the Pico oil field and construction of the Pioneer Oil Refinery in the mid-1870s, spurred an oil boom in the Valley. Pico Canyon oil flowed to the refinery via a pipe, and was refined into kerosene, lamp oil, naphtha and other petroleum derivatives. The remnants of the Pioneer Oil Refinery, which was the first viable oil refinery in the State, were damaged in the 1994 earthquake. Now owned by the City of Santa Clarita, along with 4.5 acres of land donated by Chevron Oil, the site is being evaluated for partial restoration as a historical depiction of an early oil refinery.

American explorer John C. Fremont, who would later challenge Abraham Lincoln for the Republican nomination for U.S. president, arrived at Castaic Junction with his "Buckskin Battalion" in 1847, following the future route of SR-126 from Ventura. After camping for two days in the Santa Clarita Valley, he crossed into the San Fernando Valley near the present alignment of Sierra Highway. Near the current Universal Studios Hollywood, he accepted the surrender of California from General Andres Pico. Fremont's crossing point through the Santa Susana Mountains occurred at what became known as Fremont Pass, and is now known as Newhall Pass.

In 1854, Phineas Banning made a 30-foot cut in the pass to allow the first stagecoach through. The Butterfield Overland Stage took the "Great Southern" route from St. Louis to San Francisco over Fremont Pass from 1858 until the outbreak of the Civil War in 1861. In 1863, under a construction contract awarded by the Los Angeles County Board of Supervisors, General Edward F. Beale's workers cut a 90-foot deep passageway through the pass between the present alignments of SR-14 and Sierra Highway to improve the roadway. Beale also constructed a toll house when the pass was widened, and collected toll for the right of passage for 22 years before the County halted the practice. Beale's Cut was a vital route that served the Southern California area until it was bypassed by the Newhall Tunnel in 1910.

By 1915, the Ridge Route extended from downtown Los Angeles north through the Newhall Tunnel and into the San Joaquin Valley.

In 1875 most of the Rancho San Francisco was purchased by Henry Mayo Newhall, a San Francisco entrepreneur. Much of the Valley's history from that time has been linked to the activities of Newhall and the company formed by his heirs, The Newhall Land and Farming Company. When Henry Newhall purchased the Rancho, he knew the Southern Pacific Railroad intended to lay tracks north out of Los Angeles to join with the Central Pacific and its connection to the Transcontinental Railroad. A rail route through his property would increase its value, so he sold an alignment to the Southern Pacific for $1 and a square-mile townsite to the railroad's development company for another $1.

Three months after Newhall's land purchase, the Southern Pacific began tunneling through the mountains and the San Fernando and Santa Clarita Valleys. Built with Chinese labor, at 6,940 feet the San Fernando (Railroad) Tunnel was the third-longest tunnel in the United States when it was completed on July 27, 1876. As the Southern Pacific extended track to the north, the Central Pacific was coming south to meet it. The two companies joined track near Lang Station in Canyon Country in a "golden spike" ceremony on September 5, 1876. The following month, on October 18, 1876, the Southern Pacific began subdividing the town of Newhall.

Initially the town was located at Bouquet Junction, in what would later become Saugus, named for Henry Newhall's home town in Massachusetts. Little more than a year later, in January and February 1878, the town moved three miles south to its present location at Old Town Newhall, probably because of better water availability from a natural artesian spring. The Pioneer Oil Refinery, which handled the oil piped from Pico Canyon and was initially set up along the wagon route in the Newhall Pass, moved to present-day Pine Street in Railroad Canyon next to the new train tracks. The earliest productive refinery on the West Coast, it operated until 1888.

A unique feature of the Santa Clarita Valley's historical setting is the extent of early filming in the Valley, due to its proximity to Hollywood and the presence of distinctive topographic and geologic features used as settings for early Western films. The community of Newhall contains many

notable Hollywood movie sets and is the site of the Walk of Western Stars. Some of the Western relics in downtown Newhall include the Tom Mix cottages, used as housing for the early motion picture industry; the American Theater (originally the Tumbleweed Theater) designed by Charles S. Lee and funded in large part by Actor William S. Hart in 1940; Melody Ranch (aka Placeritos Ranch and Monogram Ranch), built in the early 1920s and owned from 1952 to 1990 by actor Gene Autry and used as a location for hundreds of Western films, television series and commercials; and the Walt Disney Co.'s Golden Oak Ranch in nearby Placerita Canyon. Heritage Junction on Main Street has been set aside for the preservation of several local historic structures.

William S. Hart Park and Museum contains the 1927 retirement home of silent screen cowboy star William S. Hart, along with original furnishings, Western art, mementos of early Hollywood, and American Indian artifacts. The home and its contents were left to the people of Los Angeles County by Hart upon his death in 1946. Today it is a part of the Los Angeles County Natural History Museum system. In addition to the buildings, the site contains the 260-acre Horseshoe Ranch property, operated by the Los Angeles County Department of Parks and Recreation, and features picnic facilities, nature trails, and ranch animals, including bison initially donated in 1962 by Walt Disney. Another early Western movie actor's home that has been preserved as a County-operated museum within the planning area is that of Harry Carey Sr. and his actress-wife Olive Carey, who arrived in San Francisquito Canyon in 1916. Their son, actor Harry Carey Jr., was born at the Saugus ranch in 1921.

The Santa Clarita Valley was also the location of the second-worst disaster in California history. In 1908 the City of Los Angeles obtained rights to the watershed of the Owens Valley. Under direction of William Mulholland, chief engineer for the Los Angeles Department of Water and Power, the project was expanded in the 1920's into San Francisquito Canyon, where the St. Francis Dam was completed in 1926. From there the aqueduct traversed the eastern part of Newhall Ranch and crossed over San Fernando Pass to the spillway above the San Fernando Reservoir. In 1928 the concrete dam failed. The resulting flood of the river valley on March 12 and 13 caused at least 450 deaths and destroyed 990 homes and large areas of farmland. It was America's worst civil engineering failure of the 20th Century. In 1932-34, the Los Angeles Department of Water and Power built a new earthen dam in Bouquet Canyon.

Identification of Historical Sites

The Valley's historical heritage has been preserved in numerous historical sites throughout the planning area. When updated in 1999, the City's General Plan listed dozens of significant historical properties, sites and landmarks in the planning area, which have been included and updated in this Element (see Table CO-1 and Figure CO-6). Of these sites, one is listed on the National Register of Historic Places and 13 are recognized by the State of California. The remaining sites are designated as City Points of Historical Interest.

In addition to the listed historic sites, a literature search indicates that almost 70 Native American archeological sites have been identified near the Santa Clara River within the planning area. Native American settlements and ceremonial sites were often located in river valleys. Development in proximity to the River and its major tributaries may impact Native American heritage sites, and should be evaluated for historic resources as part of the review process.

Historic Preservation Efforts

The Santa Clarita Valley Historical Society was formed in 1975 to identify, preserve and protect the unique historical sites and structures throughout the Valley. The City and County have both worked cooperatively, along with the Historical Society, to protect significant sites. For example, the County has provided a portion of Hart Park to be set aside as "Heritage Junction," and the City and Historical Society have cooperated on relocating structures to that location for renovation and preservation. The County has also been instrumental in setting aside Harry Carey Ranch Historic District and providing funding to preserve the Placerita Canyon Park and Nature Center, where a historic cabin has been preserved and is open to the public. The City has worked cooperatively with the Santa Monica Mountains Conservancy and the Mountains Recreation and Conservation Authority to preserve artifacts related to the oil history and cultural lifeways of Mentryville in Pico Canyon. In addition, the City routinely conditions commercial and residential developers to halt work in the event that cultural resources are encountered during grading.

The City of Santa Clarita is evaluating the adoption of a Historic Preservation Ordinance, and will pursue completion of this ordinance as a General Plan objective. The City has also adopted the Downtown Newhall Specific Plan, with architectural guidelines that acknowledge the importance of the historic buildings within the Downtown Newhall planning area. The City has consistently involved the Historic Society in review of development proposals in areas containing historic sites and resources, and has required projects to mitigate impacts to historic resources as a condition of development approval.

Table CO-1 contains a listing of known sites and structures in the Santa Clarita Valley that have been identified as having historical or cultural significance based on building characteristics, events that took place at the site, or the site's role in the historical or cultural development of the community. The list is a compilation of sites that were known at the time this document was prepared. In order to ascertain whether additional sites exist within the community that should be protected due to their historical or cultural significance, the City will continue to identify any additional sites that should be added to the list.

Figure CO-6: Cultural & Historical Resources in the Santa Clarita Valley - Map Legend

Map Reference Number	Cultural or Historical Site
1	22502-22510 Fifth Street
2	22506 Sixth Street
3	22614 Ninth Street
4	22621 Thirteenth Street
5	24148 Pine Street
6	24238 San Fernando Road
7	24244 Walnut Street
8	24247-24251 San Fernando Road
9	24287 Newhall Avenue
10	24307 Railroad Avenue
11	24311-24313 San Fernando Road
12	24522 Spruce Street
13	Asistencia/Rancho San Francisco
14	Beale's Cut
15	Bowers Cave
16	Harry Carey Ranch
17	Heritage Junction Historic Park • Newhall Ranch House • Mitchell Adobe Schoolhouse • Kingsburry House • Callahan's School House • Ramona Chapel • Edison House • Pardee House/Good Templars • Saugus Depot
18	La Puerta
19	Lang Station
20	Lyon Station/Eternal Valley
21	Melody Ranch
22	Mentryville
23	Oak of the Golden Dream
24	Old Ridge Route
25	Pico #4 Oil Well
26	Pioneer Oil Refinery
27	Railroad Tunnel
28	St. Francis Dam Disaster Site
29	Sterling Borax Works in Tick Canyon
30	Vasquez Rocks
31	Walker Cabin
32	William S. Hart Park and Museum

Table CO-1: Historical Resources in the Santa Clarita Valley Planning Area

Site	Historic Significance
Oak of the Golden Dream Placerita Canyon	Site of the first discovery of gold in California in 1842 State Historic Landmark #168
Pioneer Oil Refinery 23552 Pine Street, Newhall	Oldest continuously operated oil refinery in the world; first refinery in State, producing illuminating oil. Donated to City in 1998, restored in 1930 and 1950s and 1976, but damaged in 1994 earthquake. State Historic Landmark #172
Pico #4 27201 West Pico Canyon	First successful oil well in California and longest-producing commercial oil well in the world; developed in 1876 by California Star Oil Company, a predecessor of Standard Oil Company of California. Located in Mentryville/Pico Canyon. National Register of Historic Places State Historic Landmark #516
Mentryville 27201 West Pico Canyon	Oil boom town that grew around Pico #4 for derrick workers. Four buildings remain, and many others have been relocated to Newhall. Located in Santa Clarita Woodlands Park, maintained by Santa Monica Mountains Conservancy, and open to the public. State Historic Landmark #516-2
Asistencia/Rancho San Francisco West of Magic Mountain Parkway near SR-126	The Santa Clara River Valley was a part of Mission San Fernando in 1797. A granary and estancia (outpost) were established on this site in 1804. Historic plaque located at Castaic Junction. State Historic Landmark #556
Lang Station East of Lang Station Road	A health spa, hotel, and freight station were established on this site in 1871. In 1876, a golden spike was driven connecting San Francisco and Los Angeles by rail. Only relics of the station remain. State Historic Landmark #590
Lyons Station/Eternal Valley Cemetery 23287 Sierra Highway, Newhall	A stage stop was built here in 1852. It was used by the Butterfield Overland Stage line from 1857 to 1861 as a resting place for soldiers and camel caravans from Fort Tejon. Many pioneers are buried in the Eternal Valley Cemetery. State Historic Landmark #688
St. Francis Dam Disaster Site DWP Power Plant 2 San Francisquito Canyon Road	On March 12, 1928, the dam, which was a part of the Los Angeles Aqueduct system, collapsed, spilling more than 12 billion gallons of water into the Valley and killing at least 450 people. State Historic Landmark #919
22621 Thirteenth Street Newhall	Single-family dwelling built in February 1873 for Adam Malinzewski at Lyons Station; moved by J. O. Newhall to San Fernando Road in Newhall about 1879. At the turn of the century it was acquired by the Frew family, who were pioneer blacksmiths, and later Ed Jauregui, who moved it to its present location. City Point of Historical Interest
24148 Pine Street Newhall	Single-family dwelling constructed in 1878 by California Star Oil Company as a guest house for visiting executives and politicians. Standard Oil later sold it to Josh Woodbridge, who lived there until his death in 1950. City Point of Historical Interest
24522 Spruce Street Newhall	Commercial structure once known as the "hoosegow". Initially planned as a wooden structure on this site in 1888, bids for a jailhouse were opened February 20, 1906, resulting in the construction of this building in the Spanish Mission style. It served as a jail/constable's office until 1926, when a sheriff's substation opened. The structure still retains the original cell doors and barred windows. City Point of Historical Interest

Site	Historic Significance
24311-24313 Main Street Newhall	Commercial structure in historic downtown Newhall built by Thomas M. Frew in 1910 for his blacksmith shop. Originally built in Mission Revival style, the building was expanded in 1924 when his son, Thomas Frew Jr, modified the structure into a welding and machine shop. In 1935, concurrent with the widening of San Fernando Road (Main Street), it was remodeled into its present Spanish Mission style. City Point of Historical Interest
22502-22510 Fifth Street Newhall	Commercial structure used by Newhall Ice Company. The structure was built in 1922 by Fred Lamkin as a warehouse and storage yard. Lamkin came to Newhall in 1917, opening a garage facing San Fernando Road. Shortly after construction the warehouse was converted into an ice house, which is still in operation. City Point of Historical Interest
24244 Walnut Street Newhall	Church building erected in 1940 under the direction of pastor Leroy Hux, for First Baptist Church of Newhall. The building was later used by several religious groups, and is now known as Queen of Angels Catholic Church. City Point of Historical Interest
22616 Ninth Street Newhall	Single-family dwelling built circa 1908 as a residence for Ray Osborne, Superintendent of the Sterling Borax Works in Tick Canyon. The house was originally located in the small mining town of Lang in Canyon Country, and was moved to its present location in 1928. City Point of Historical Interest
24287 Newhall Avenue Newhall	Single-family dwelling, commonly known as the Erwin house, built in the California bungalow style around 1910. Unusual in design, the structure is one of the last remaining bungalows in Santa Clarita. City Point of Historical Interest
22506 Sixth Street Newhall	Commercial building originally erected on San Fernando Road by Albert Swall in 1902. Swall also developed other commercial properties along San Fernando Road to establish a business district. In 1925 the structure was moved to its present location. The building was later used as the circulation office for the Newhall Signal newspapers from the 1960's until 1986. City Point of Historical Interest
24238 Main Street Newhall	Commercial building constructed by the Sheriff's department in 1926 as Substation #6. The building housed a company of eight Sheriff's deputies commanded by Captain Jeb Steward, and served as the community's second jail after closing of the old constabulary/jail building on Spruce Street. The Newhall Signal newspaper used the building from 1968-1986. City Point of Historical Interest
24307 Railroad Avenue Newhall	Commercial building commonly known as "Ye Olde Courthouse." The Newhall Masonic Building Company, Ltd. was incorporated in 1931 and completed this two-story project in 1932. The County Courthouse occupied the ground floor, and the Masonic Lodge the second story. Lumber from the old Mayhue building was later used, including the floor of the Hap-A-Lan dance hall which previously occupied the site. The County relocated the court to Valencia and the first floor was renovated into office uses. City Point of Historical Interest
24247-24251 Main Street Newhall	Seven commercial structures commonly known as the Tom Mix Cottages. The small building at 24247 was built by Halsey W. Russell in 1919. In 1922 the other six cottages were added, forming a motor court catering to drivers on the old Ridge Route. These structures were also used by people in the motion picture industry for lodging during filming in the area. Tom Mix used one as a dressing room on several occasions, and the area was known as a "Mixville" – earlier albeit smaller than his primary Mixville studio in Glendale. City Point of Historical Interest
William S. Hart Park and Museum	The mansion on this property was built for western film actor William S. Hart in 1927, and Hart filled it with Western art and artifacts. Many Western movies were filmed here. In addition to the historic listing for the property as a whole, several features of the site qualify for individual listing as historic resources, including the bunk house, headquarters building, garage and chauffeur's quarters, gate tower, pool house, ranch house museum, and sundeck/tea room. State Point of Historical Interest
Heritage Junction Historic Park 24151 Newhall Avenue Newhall	City Point of Historical Interest located within William S. Hart Park, and containing the following structures:

Site	Historic Significance
1. Newhall Ranch House	1. Built around 1865 as a small house with a basement, this building served as the headquarters of the Rancho San Francisco, the original land grant comprising 48,000 acres of the Santa Clara River Valley. This ranch was owned after 1875 by Henry Mayo Newhall and was administered by his son George, who expanded the Ranch House in 1893. Originally located in sight of the Estancia de San Francisco Xavier (on what is now Six Flags Magic Mountain property), the structure was relocated to Heritage Junction in 1990.
2. Mitchell Adobe Schoolhouse	2. Colonel Thomas Finley Mitchell, an officer of the Mexican-American War, homesteaded Sulphur Springs in the 1860's, building an adobe that served as his family's home. One room of the adobe was used as a schoolhouse for the local children, the first in the area and home of the second oldest school district in Los Angeles County. In 1986 the adobe was rescued from destruction and moved brick-by-brick to Heritage Junction, where it was rebuilt.
3. Kingsburry House	3. This house was built in 1878 as a residence at 8th Street and San Fernando Road (Main Street). In 1883 it was occupied by Lyman Steward, a founder of the Union Oil Company. In 1911 it was moved to Walnut Street near Market. It is a one-story Colonial Revival cottage with a porch supported by four turned columns. This house is largely intact with original features, including double-hung windows. It was moved to Heritage Junction in 1987, and decorated in historic style by the Questers.
4. Callahan's Schoolhouse	4. This 1927 structure originated at Robert E. Callahan's Western town/amusement area that operated in the 1920's in Santa Monica as the Mission Village, and was relocated to Mint Canyon (Saugus) when the freeway was built in 1963 and renamed Callahan's Old West. The structure was built to house six antique school desks which came from a mining camp in Vallejo, along with a speaker's podium and blackboard representative of a one-room schoolhouse. The building was donated by Callahan's widow, Marion, and moved to Heritage Junction in 1987.
5. Ramona Chapel	5. Designed by noted composer Carrie Jacobs Bond, this chapel was based on the chapel at Rancho Camulos made famous in Helen Hunt Jackson's novel Ramona. It was built in 1926 as part of Robert E. Callahan's Mission Village in Santa Monica, later operated as Callahan's Old West, and was relocated in 1963 due to freeway construction. Wall paintings in the chapel are by Frank Tinney Johnson. The altar is said to be over 200 years old, and the wooden pews date back to 1858. The chapel was donated by Callahan's widow, Marion, and moved to Heritage Junction in 1987.
6. Edison House	6. This Bavarian-style structure was built in 1919 and modified in 1925 as part of a group of houses provided for Edison workers assigned to the Saugus substation. When the St. Francis Dam broke and flooded the area in 1928, these structures escaped damage. After years of use by Edison employees, the cottages were acquired by Newhall Land and Farming Company, which demolished six of the cottages. This house, being in the best condition, was preserved and relocated to Heritage Junction in 1989.
7. Pardee House/Good Templars 24275 Walnut Street Newhall	7. Built in 1890 on Pine Street in Newhall by Henry Clay Needham, a prominent orator and later a prohibitionist candidate for president, as a Good Templar's Lodge. Moved in 1893 by Ed Pardee, local oilman and police constable, who expanded the structure and used it as his residence. The structure was later used as a telephone exchange by Pacific Bell; as a teen center by the Santa Clarita Valley Boys Club; as the Newhall-Saugus-Valencia Chamber of Commerce office; and as a movie set by Tom Mix in the 1920's. Donated to the historical society and moved to Heritage Junction in 1992. State Point of Historical Interest
8. Saugus Depot Hart Park Site Newhall	8. The last remaining railroad station in the Santa Clarita Valley, this structure was built in 1887 by Southern Pacific Railroad when completing the spur line to Ventura. The station was used until 1978, and was moved to Heritage Junction at Hart Park in 1980, where it is used by the SCV Historical Society as a general history museum. Next to the station is a historic Mogul steam locomotive, built in New York in 1900 and donated to the Historical Society by Gene Autry in 1982. City Point of Historical Interest

Site	Historic Significance
Beale's Cut Stagecoach Pass Adjacent to Sierra Highway near Newhall Avenue Newhall	In 1862-63, General Edward Beale improved the wagon route through the present-day Newhall Pass between the current locations of SR-14 and Sierra Highway to a depth of 90 feet. Beale installed a toll booth at this location, which he continued to operate for 20 years. The Newhall Tunnel, part of the Ridge Route, bypassed Beale's Cut in 1910. State Point of Historic Interest #1006
Old Ridge Route	First opened in 1915, the narrow, curvy 30-mile Ridge Route is a 20-foot wide roadway, carved out using horse-drawn dirt scrapers that zigzagged across the ridges of the western San Gabriel Mountains. The road was named for the way it followed the ridgeline of the mountains. Paved in 1919, the Ridge Route Highway, officially named the Castaic-Tejon Route, became the first direct road connecting Los Angeles and Bakersfield. Often referred to as the original Grapevine route, the nickname stems from the fact that early wagoners had to hack their way through thick patches of Cimarron grapevines that inhabited "La Canada de Las Uvas" ("Canyon of the Grapes"). Without this road, California may have become two separate states. In 1933 the State opened the Ridge Route Alternate, a three-lane road with fewer curves that would eventually be designated California Route 99. This alternate was widened to four lanes in the 1950s, then realigned and rebuilt in the 1960s as a high-speed interstate freeway. The original Ridge Route was abandoned, but parts of the old road are still visible north of Castaic. National Register of Historic Places
Melody Ranch Placerita Canyon Road and Oak Creek Canyon Road, Newhall	Historic ranch set used for western films. The buildings were originally developed by pioneer filmmakers Ernie Hickson and Trem Carr about 1922 and consisted of authentic Western buildings located at the present location of Golden Oak Ranch. In 1936 the buildings were moved to their current location. The site at that time was also known as the Monogram Ranch, as so many of the company's Westerns were filmed there. From 1949 to 1951 the site was the scene of Newhall's Old West 4th of July celebration, when it became "Slippery Gulch." Purchased by western actor Gene Autry in 1952, the site was renamed Melody Ranch and used for many early television programs, including the long-running "Gunsmoke." Most of the structures burned down in a valleywide brush fire on August 26, 1962; however, the trademark Spanish-style arches and parts of the main street and Mexican village are still intact. In 1990 the ranch was purchased by the Veluzat family of Newhall and rebuilt. Today it remains a working movie ranch and the site of the City's annual Cowboy Festival. City Point of Historical Interest
Harry Carey Ranch Historic District 28515 San Francisquito Canyon Road	This complex contains historic buildings associated with western film actor Harry Carey, who purchased the property for a residence and filming in 1916. Nine buildings of the complex comprise the Harry Carey Historic District. Harry and Olive Carey had the ranch house and its various outbuildings built during the 1920s and 1930s, a period when they and their children lived at the ranch. Carey's 20-year career included more than 200 films. In 2005, the County accepted the donation of the Historic District from the property owner as part of the approval process for an adjacent housing development. The significance of the district is based not only on its role in the early film industry, but on the character and quality of the ranch buildings and the main residence known as the Tesoro Adobe. The property is maintained as a museum by the County of Los Angeles.
Railroad Tunnel Newhall Pass	Completed in 1876 by the Southern Pacific Railroad with Chinese immigrant labor, the 6,940-foot tunnel was the third longest tunnel in the world at that time. The tunnel is still used for freight rail and Metrolink commuter rail service. California Register of Historical Resources.
Bowers Cave Near Val Verde	Discovery site of significant Native American cultural artifacts, the cave is located at the entry to Chiquita Canyon Landfill.
La Puerta Elsmere Canyon	The "door of The Old Road" is located in the southwestern portion of Elsmere Canyon. Identified as both a natural physical and visual resource, La Puerta also figures as a significant anthropological, military, religious, and cultural resource in the planning area. La Puerta served as a geographic landmark for local Native Americans, Spanish explorers, and American pioneers crossing the Valley.
Walker Cabin Placerita Canyon Natural Area	Built by Frank Walker around 1920, the cabin served as the family's second home for about 10 years. The cabin has been fully restored and refurnished as part of the County-maintained Visitor's Center.

Site	Historic Significance
Borax Mine Tick Canyon	In the spring of 1905 gold prospectors Henry Shepard and Louis Ebbenger found a rich deposit of borates in Tick Canyon. They sold the claim to Thomas Thorkildson and Steven Mather for $30,000. Sterling Borax Works was formed to mine the claim, and began operations in 1908. A large mill was constructed north of what is now Davenport Road, and a narrow-gauge train line connected the mine to Lang Station, six miles away. Borax was hauled along this rail line by engine "Sterling No. 2" for 70 years. The mining camp, called Lang, included a boarding house, offices, company store, a dozen residences, corral, and warehouses. The Sterling Mine was never a big producer, generating about 20,000 tons per year of borates during peak production. Borax Consolidated, a forerunner of U.S. Borax, bought the Sterling Mine in 1911 for $1.8 million. For many years, the corporate headquarters were located in Valencia.
Vasquez Rocks Agua Dulce	This 745-acre park of unique geological rock formations is located near Agua Dulce Springs. The park features a history trail tour about the Tataviam Indians and early Spanish settlers. Located on the San Andreas fault, the sandstone rock formations were uplifted during the Cenozoic era, approximately 25 million years ago. In 1873-74, one of California's most notorious bandits, Tiburcio Vasquez, used these rocks as a hiding place to evade law enforcement. His name has since been associated with the geologic feature. National Register of Historic Places (Site #72000228, 1972)
Sources: Santa Clarita Valley Historical Society, State of California Office of Historic Preservation, The Signal, and City of Santa Clarita	

VIII. SCENIC RESOURCES

The Value of Scenic Resources

For many people, the primary sensory experience of a place is visual. A community's appearance and scenic resources contribute to a sense of place and influence residents' perceptions about their quality of life. Memorable and distinctive images provide residents with spatial orientation and identity, heightening their feeling of belonging to the place, and instilling a sense of civic pride.

"Aesthetic value" refers to the perception of the natural beauty of an area, as well as the elements that create or enhance its visual quality. While aesthetic value is subjective, it is one of the elements that contribute to people's experience of an area. Most communities identify scenic resources as an important asset, although what is considered "scenic" may vary according to its environmental setting. For example, a valley community has distinctive scenic resources that differentiate it from a coastal or mountain community.

"Scenic resources" can include natural open spaces, topographic formations, and landscapes that contribute to a high level of visual quality. These are significant resources that can be maintained and enhanced to promote a positive image in the community. Many people associate natural landforms and landscapes with scenic resources, such as lakes, rivers and streams, mountain meadows, and oak woodlands. These areas, generally felt by residents to possess natural beauty, provide a positive visual experience and help to define the aesthetic character of an area. Scenic resources can also include man-made open spaces and the built environment, such as parks, trails, nature preserves, sculpture gardens, and similar features.

"Viewsheds" constitute the range of vision in which scenic resources may be observed. They are defined by physical features that frame the boundaries or context of one or more scenic resources. A region's topography can lend aesthetic value through the creation of public view corridors of ridgelines, and through the visual backdrop created by mountains and hillsides. Viewsheds and scenic vistas may include views of both natural and built environments, and are also considered important scenic resources.

Scenic resources in the Santa Clarita Valley are described below and shown on Figure CO-7.

Scenic Mountains and Canyons

Due to its diverse topography, including mountain backdrops, hillsides and ridgelines, canyons and streams, and a broad river valley, the planning area contains a wide range of scenic views and resources. Natural areas range from grasslands to forest, contributing to the variety of scenic experiences. Within the built environment, greenbelts and parkways, trail systems, and parks provide scenic amenities.

The mountains surrounding the Valley provide a sense of form and containment. Well-defined ridgelines, slopes and canyons provide a visual backdrop to the urban envi-

ronment, create a sense of place for each neighborhood or district, and provide opportunities for residents throughout the Valley to experience the natural environment.

Ridgelines project from the lower foothills of the San Gabriel and Sierra Pelona mountain ranges to the Valley floor. The City and County have designated specific ridgelines and established land use policies designed to preserve the views of these ridgelines, as described in the Land Use Element. Sloping from the ridgelines are numerous canyons that give local identity to neighborhoods within the planning area. These foothill and canyon zones are important scenic resources that, because of inherent slope constraints, have remained undeveloped and support a variety of natural habitats. Major scenic canyon areas are described below.

- Placerita Canyon, running east and west in the southerly portion of the planning area, is characterized by shaded oak groves, a seasonal stream lined with cottonwoods, willows and sycamores, sandstone formations, and many other plant and animal communities. Its historic "Oak of the Golden Dream" is the site of California's first gold discovery in 1842, and is a designated State Historic Landmark. The Canyon contains a seasonal waterfall and hiking trails, including a trail leading to the top of the Santa Clara Divide in the San Gabriel Mountains. From this vantage point one can view the entire Santa Clarita Valley to the north and the San Fernando Valley to the south, with long-range views beyond. The Placerita State Park and Nature Center is located within the canyon.

- Whitney Canyon is located at the intersection of Sierra Highway and Newhall Avenue, just east of SR-14, and serves as the gateway to Angeles National Forest and the Rim of the Valley Trail Corridor. Due to its location between Elsmere and Placerita Canyons, Whitney Canyon is the middle link for the continuation of the Rim of the Valley Trail Corridor and the natural wildlife corridor through these canyons into Towsley Canyon and the Santa Clarita Woodlands. The canyon area contains oak forests, waterfalls, chaparral, coastal sage scrub, and a riparian watershed area; 442 acres are publicly owned for preservation as natural open space, through a partnership between the City and a conservation authority.

- Elsmere Canyon lies within the Angeles National Forest, near the intersection of Sierra Highway and Newhall Avenue, east of SR-14. Encompassing 2,700 acres, about half the canyon area is within the National Forest. Like other canyons in the planning area, Elsmere Canyon has served as a popular film site for western movies. A proposal to locate a landfill in the Canyon was withdrawn in 2004 based on public concerns about environmental quality, and in 2007 the property owner donated 400 acres of Elsmere Canyon to the Mountains and Recreation Conservation Authority for use as an open space preserve. Elsmere Canyon contains abundant wildlife, riparian habitat, coastal sage, and oak woodlands, and provides a wildlife corridor from the Santa Susana Mountains to the San Gabriel range.

- Bouquet Canyon, in the northerly portion of the planning area, follows the course of Bouquet Creek, generally from Bouquet Reservoir south to the junction of Bouquet Canyon Road and Soledad Canyon Road. The canyon contains oak, willow, and sycamore groves, and the development character north of Saugus is rural.

- San Francisquito Canyon runs north and south from Saugus to Green Valley, and is a rural environment supporting numerous horse ranches. The Canyon also contains sites of historic significance, such as the Harry Carey Historic Ranch.

- Sand Canyon, located in the eastern portion of the planning area, runs northward from the steep slopes in the Angeles National Forest to the Santa Clara River floodplain. The character of the canyon ranges from heavy woodland to large, rustic rural estates with abundant trees. Views from the upper reaches of the canyon include the valley floor.

- Pico Canyon, located in the northern portion of the Santa Clarita Woodlands Park in the western portion of the planning area, has been used extensively for oil extraction. The canyon was once occupied by Mentryville, an oil boomtown, and now contains valley and coast live oaks and views of the valley floor. The Mentryville historic site is contained within a State Park.

- Towsley Canyon, located in the central portion of the Santa Clarita Woodlands Park, offers visitors a diverse natural area. Evidence of Native American heritage and early California oil interests are visible, along with spectacular geologic formations in "The Narrows". The Canyon contains numerous hiking trails along with Ed Davis Park.

- Tick Canyon lies in the Soledad Basin and is a tributary of the Santa Clara River channel, between Mint Canyon to the west and Tapia and Spring Canyons to the east. The Canyon was mined for various minerals during early settlement of the Valley.

- Wiley Canyon forms a portion of the pass through which Interstate 5 passes as it enters the planning area from the south. The upper reaches of the canyon provide a sense of enclosure and include views of scrub-filled hillsides and stands of oak trees, while the northerly portion of the canyon offers expansive views of the Santa Clarita Valley.

- Rice Canyon is located south of Wiley Canyon in the southwestern portion of the planning area, and offers views of rugged topography, coastal sage scrub, and stands of oak trees.

Scenic Woodlands

Protected forest land within the Angeles and Los Padres National Forests surround the planning area. Oak woodlands within these forests also extend into rural portions of the planning area, contributing to its rural and scenic character. Oak woodlands occur in scattered locations, primarily in the southerly portions of the planning area, and contain a diverse habitat including six species of oak. Cottonwood-willow riparian forests are found primarily along the Santa Clara River and its tributaries. Several of the County's Significant Ecological Areas (described above) have been adopted to protect oak woodland and cottonwood-willow riparian forest areas.

Scenic Water Bodies

Rivers and streams located in canyon bottoms provide scenic visual relief from urbanization as well as habitat for wildlife. The most significant river feature in the Valley is the Santa Clara River, which flows approximately 100 miles from its headwaters near Acton to the Pacific Ocean, and is one of only two natural river systems remaining in Southern California. The river flows east to west through a beautiful valley formed between the Santa Susana Mountains and the Transverse Ranges. Over 4,000 acres of high quality riparian habitat have been preserved in a natural state along the length of the River.

Some of the major tributaries to the Upper Santa Clara River watershed include Castaic Creek, San Francisquito Canyon, Bouquet Canyon, Sand Canyon, Mint Canyon, Sand Canyon, Oak Springs Canyon, and the South Fork of the Santa Clara River. Newhall Creek, Placerita Creek, and Towsley Creek are tributaries to the South Fork. Castaic Lake, in the northern portion of the planning area, provides scenic views as well as recreational opportunities. The west side of the lake is surrounded by parkland and sandy beaches.

Vasquez Rocks

Vasquez Rocks County Park, located in the community of Agua Dulce west and north of SR-14, is an area of unique geologic formations that has been the site of hundreds of film shoots. Sculpted by earthquake activity along the Elkhorn fault, the rock formations were compressed, folded, and tilted up to a height of nearly 150 feet. Erosion has shaped the coarse-grained yellow sandstone into jutting and sweeping formations interspersed with shale and basalt layers. Vasquez Rocks are both a visual and historical landmark in the community.

Impacts of Development on Scenic Views

Urban development has the potential to impair scenic resources if not carefully planned and controlled. Increasing development pressures could impact the quantity, quality, and variety of scenic vistas in the Valley through increased smog and light pollution, development on prominent ridgelines and hillsides, obstruction of scenic views along various roadways, signage and streetscape clutter, and aesthetically deficient development. Policies have been added to the Element to address the goal of protecting the scenic and aesthetic beauty of the Valley.

IX. AIR RESOURCES

The planning area is located within the South Coast Air Basin, a 6,745-square mile area encompassing Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. The regional climate

within the Basin is semi-arid, characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Bounded by the Pacific Ocean to the west, and mountains to the north, east, and south, and with abundant sunshine and frequent inversions, the South Coast Air Basin is naturally conducive to the formation of air pollution.

The Santa Clarita Valley is surrounded by the Santa Susana and San Gabriel mountain ranges on the south, east and west, and the Sierra Pelona Mountains on the north. The Valley lies in a transitional microclimatic zone of the Basin between the "valley marginal" and "high desert" climate types. Situated far enough from the ocean to escape coastal influences, the Valley's climate is generally mild with hot summers and sunny, warm winters. Average annual precipitation is about 13 inches, usually received between November and March, although some mountain areas south of the Valley may receive up to 24 inches of precipitation per year.

Predominant wind patterns for the Santa Clarita Valley generally follow those of a mountain/valley regime. During the day, effects of the onshore flow reach inland and are enhanced by a localized up-valley or mountain pass wind. During the night, surface radiation cools the air in the mountains and hills, which flows down-valley producing a gentle "drainage wind." The predominant wind patterns in the Valley are broken by occasional winter storms and episodes of Santa Ana winds, which are strong winds that originate in the desert. Usually warm and often carrying dust and sand, the Santa Ana winds occur 5 to10 times per year between September and March, and are particularly strong in mountain passes and at canyon outlets.

Air pollution emissions within air basins are generated by stationary, mobile, and natural sources. Stationary sources are further classified as point or area sources, with point sources occurring at an identified location such as a manufacturing plant, and area sources comprised of multiple dispersed emissions such as use of paints, generators, lawn mowers, aerosol cans, and agriculture. Mobile sources refer to emissions from motor vehicles, aircraft, trains, and construction equipment. Air pollution can also be generated by the natural environment, such as when fine dust particles are pulled off the ground surface and suspended in the air during high winds.

Both the federal and State governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health. These standards have been set at levels that could be generally harmful to human health and welfare, and to protect the most sensitive persons from illness or discomfort with a margin of safety. The South Coast Air Quality Management District (SCAQMD) is responsible for bringing air quality within the South Coast Air Basin into conformity with these standards. SCAQMD defines typical sensitive receptors as residences, schools, playgrounds, child care centers, athletic facilities, hospitals, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The air pollutants which are most relevant to air quality planning and regulation in the planning area include ozone, carbon monoxide, nitrogen dioxide, fine suspended particulate matter, sulfur dioxide, and lead. Ozone is a gas formed when volatile organic compounds and nitrogen oxides, byproducts of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. The most frequent transport route for ozone into the planning area is from the Los Angeles Basin and San Fernando Valley, borne by daily wind patterns through the Santa Clara River Valley. Carbon monoxide is a colorless, odorless gas produced by incomplete combustion of fuels, with the highest concentrations generally found near congested transportation corridors. Major sources of fine suspended particulate matter are diesel engines, tires and brakes.

The greatest source of air pollutants in the basin is from mobile sources. Because of its geographical location and meteorological conditions, the Santa Clarita Valley records some of the highest ozone readings in the Basin. The data indicate that local ozone concentrations usually result from pollutants transported from outside the Valley. However, locally-generated air pollutants are also an issue for Valley residents, due to increased growth and automobile traffic. Localized carbon monoxide concentrations are found at congested intersections, especially in winter. Concentrations of fine airborne particulates result from locally generated emissions, such as increased truck traffic. Stationary sources include oil and gas producers and industrial uses.

Land use patterns and the density of development directly affect the amount of air pollution that is generated within a community. Land uses that are segregated increase the number of motor vehicle trips and associated air pollutant emissions, because it is inconvenient or impossible for

residents to walk or bicycle between destinations, or public transit is not available. Higher density communities that mix residential with commercial, business, and employment uses are designed to reduce reliance on motor vehicle use, or reduce the trip length and frequency needed. In addition, communities in which the ratio of jobs to housing units is not balanced result in additional vehicle miles traveled by commuters who must drive to employment centers.

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. However, the City and the County, like all other local planning agencies, have an important role to play in controlling air pollution through their land use and transportation policies. Local agencies have a shared responsibility to promote strategies for trip reduction, congestion management, low emission vehicle infrastructure, transit accessibility, and energy conservation.

The California Air Resources Board (CARB) has prepared guidelines for local jurisdictions to consider incorporating into planning documents, such as this Area Plan, to protect residents, particularly sensitive receptors, from harmful air pollutants. Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e. children, the elderly, and those with pre-existing serious health problems affected by air quality). The health of these individuals can be seriously impacted by continuous or repeated exposure to air pollution, which can increase the risk of cancer, asthma, impaired lung function in children, bronchitis, and cardiovascular disease. The CARB guidelines recommend minimum spacing requirements between sensitive uses and individuals, and sources of air pollution. Policies have been included in the element to require adequate separation of uses to protect public health.

In addition to pollutants, some land uses generate odors which are irritating or have the potential to cause headaches, nausea or other health effects. Examples of uses which have the potential to generate odors include sewage treatment plants, landfills, recycling facilities, waste transfer stations, auto body shops, coating operations, fiberglass operations, and uses that process or store chemicals or petroleum products. Control and regulation of odors in the planning area is the responsibility of the SCAQMD. However, adequate separation between uses which have the potential to generate odors and sensitive land uses has been considered in preparation of the Land Use Map.

Land uses that have the potential to be sources of air-borne dust and particulates include rock crushing and gravel operations, quarrying, mining, and recycling of construction debris. In addition, diesel engines have been identified as a source of toxic particulate matter. According to CARB, diesel particulates represent 70 percent of the known potential cancer risk from air toxics in California. CARB recommends that planning documents, such as this Area Plan's Land Use and Circulation Elements, consider air quality and public health issues by locating residences and other sensitive land uses away from sources of air pollution, and by ensuring that circulation facilities such as truck routes and truck stops are not located near sensitive uses.

Another major issue in terms of air quality is climate change associated with carbon emissions. This issue is discussed in the next section.

X. CLIMATE CHANGE & ENERGY CONSERVATION

Background & Legal Requirements

The Intergovernmental Panel on Climate Change (IPCC) was established under the auspices of the United Nations to produce a global consensus on the science and economics of climate change. The IPCC does not conduct any research nor does it monitor climate related data. Its role is to assess the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change. In 2007, the IPCC issued a series of reports. The first report provided a summary of the science of what is causing climate change (Physical Science Basis), and the second report (Summary for Policy Makers) outlined the expected impacts, adaptation, and vulnerability of the environment to climate change. The conclusions of these two reports were:

- The global atmospheric concentrations of greenhouse gases (including methane, carbon dioxide and nitrous oxide) have increased due to human activity since 1750.
- The increase in these concentrations is primarily due to the consumption of fossil fuels.
- The global mean temperature is likely to increase between 1.8°C and 4.0°C by the end of the century.

- Sea levels are likely to rise between 0.2 and 0.6 meters by the end of the century.

- Heat waves, thaw events, and heavy precipitation are likely to become more intense.

The third IPCC report (Mitigation of Climate Change) addressed mitigation measures that can be taken to address climate change. This report concluded that although climate change threatens the global environment if unchecked, catastrophic impacts of climate change can be avoided if immediate and consistent actions are taken to reduce global greenhouse gas emissions.

The term "*greenhouse gases*" (GHG) refers to gases in the Earth's atmosphere that act to absorb long-wave radiation from the sun. These gases act like an insulating blanket and may result in an increase in global temperatures. The primary GHGs are water vapor, carbon dioxide, methane, and nitrous oxide.

"*Climate Change*" is a term that refers to changes in the global temperature over time. Global temperature is generally determined by three different methods, or "*forcings*":

- Changes in how the Earth receives incoming solar radiation;

- Changes in the way solar radiation is reflected by the Earth; and

- Changes in the way solar radiation is absorbed by the Earth.

Each of these forcings occurs naturally and have influenced global climate for billions of years, resulting in a series of gradual warm periods and cold periods. The concept of man-made, or "*anthropogenic*" climate change is contained within the third forcing listed above. As previously stated, an increase in the concentration of GHG affects how the earth absorbs solar radiation and can lead to an increase in global temperature.

According to the United States Environmental Protection Agency, the leading causes of GHG emissions in the United States are the generation of electricity, primarily by coal burning power plants, and tailpipe emissions from vehicles, primarily passenger cars. The United States emits over seven billion tons of GHG annually and has the highest per-capita GHG emission in the world. By contrast, California is the twelfth largest emitter of carbon dioxide in the world. A study completed in 2007 by the Netherlands Environmental Assessment agency concluded, however, that China has superseded the United States in total annual carbon dioxide emissions.

California leads the nation in vehicle miles traveled. In California, over 70 percent of GHG emissions come from burning fossil fuels, and over 50 percent of the total GHG emissions in the State are from vehicle exhaust. GHG emissions are created by vehicle transit in three ways :

- The fuel efficiency of the vehicle;

- The carbon content of the fuel itself; and

- The amount of vehicle miles travelled over a given amount of time.

The United States Department of Transportation estimates that the national per-capita vehicle miles travelled (VMT) exceeded 10,000 miles in 2005. Since 1980, VMT has increased three times faster than the national population and twice as fast as vehicle registration. Municipalities have an opportunity to impact VMT through land use policy.

A 2006 report to Governor Schwarzenegger prepared by the California Climate Action Team concludes that the climate in California will likely increase between 3°F and 10°F by the end of the century. Consequences of this temperature rise in the State of California would include substantial loss of snowpack, increased risk of large wildfires, impacts to local air quality, increased demand for the generation of electricity, reduced agricultural yield, and negative impacts on tourism. The State Department of Water Resources has identified the following projected impacts to California's water from climate change:

- By 2050, a loss of at least 25 percent of the Sierra snowpack, an important source of urban, agricultural and environmental water;

- Variable weather patterns, with more severe winters and spring flooding and longer droughts;

- Flood levels on many California rivers exceeding design flows and causing levees, dams and other infrastructure to fail;

- Rising sea level, threatening many coastal communities as well as the Sacramento-San Joaquin Delta, which supplies 25 million Californians with drinking water;

- Rising water temperatures and changes in runoff patterns that may affect aquatic species and agriculture; and

- Lower groundwater tables due to hydrologic changes and greater demand.

The third IPCC report outlines a series of steps that should be taken to reduce the effects of climate change. Many of these steps can be taken with no or very little cost, such as improving building insulation and banning incandescent light bulbs. Other low-carbon technologies may increase expense, but are considered feasible. For example, enhancing the effectiveness of wind and solar power would require improvements in technology and infrastructure, but these costs may be outweighed by the benefits of reducing carbon emissions from coal generation plants. Overall, the IPCC report recommends stabilizing GHG at 550 parts per million, a level that would limit the increase in global temperature to acceptable levels.

The Obama Administration is in the process of developing a carbon dioxide "cap-and-trade" system for regulating carbon emissions from point sources. This cap-and-trade system (as opposed to a carbon dioxide tax) would work by first establishing a total emission cap for GHG and then permitting companies to emit a specific amount of GHG. Companies would be able to sell any excess credits to other companies for a profit if they emit less than their permitted amount. Given its link to climate change, the United States Environmental Protection Agency is also exploring the inclusion of carbon dioxide under the Federal Clean Air Act, thereby subjecting carbon dioxide to regulations under the Clean Air Act.

Responding to the threat of global warming, Governor Schwarzenegger signed Executive Order S-3-05 in June 2005, recognizing global climate change and its impacts on California, and creating the Governor's Climate Action Team. In September 2006, the Governor signed Assembly Bill 32 (AB 32) into law, mandating the reduction of GHG emissions in California. AB 32 requires reduction of the State's GHG emissions to 1990 levels by 2020, a cap equal to a 25 percent reduction from current levels. Over 400 cities in the United States have signed commitments to reduce GHG emissions by at least 7 percent below 1990 levels by 2012.

The State of California strongly encourages local planning agencies to respond to the threat of global warming by implementing carbon reduction measures at the local level. Letters from the State Attorney General's Office to various jurisdictions throughout the State have emphasized the need to incorporate mitigations to reduce GHG emissions in local policy documents, such as General Plans and Area Plans, stating:

> AB 32 requires both reporting of greenhouse gas emissions and their reduction on a brisk time schedule, including a reduction of carbon dioxide emissions to 1990 levels by 2020. Local governments will be called upon to help carry out the legislation's provisions, and the General Plan revision is the appropriate place to identify both carbon dioxide and other greenhouse gas sources, as well as actions for mitigation of the increases in emissions in greenhouse gases resulting from actions set forth in the General Plan revision.

The Governor's Office of Planning and Research (OPR) released guidelines to assist lead agencies in defining thresholds of significance for GHG emissions as a part of the California Environmental Quality Act (CEQA) review process. Senate Bill 97 required OPR to adopt these guidelines by January 1, 2010.

On December 12, 2008 the California Air Resources Board (CARB) adopted the Climate Change Draft Scoping Plan (Scoping Plan). The Scoping Plan details how the mandates established by AB 32 will be implemented. The plan recommends sixteen "reduction measures" that will result in a state-wide emission reduction target of 174 million metric tons (mmt) of carbon dioxide. CARB estimates that achieving this target will reduce GHG emissions in California to 1990 levels.

One of the recommended reduction measures identified by the Scoping Plan is the GHG emission reduction target within future Regional Transportation Plans (RTP). This measure sets an emission reduction target of 5 mmt to be derived from RTP policies regarding VMT that will be implemented by Municipal Planning Organizations (MPO) and local governments. Specifically, the regional MPO's and local governments across the State will be required to reduce VMT through the creation of regional Sustainable

Community Strategies (SCS) and local land use policy. Senate Bill 375 (SB 375) was approved by the Governor on September 30, 2008 and provides the legislative framework for this target to be achieved. CARB is the regulating agency. The new SCS's will be a part of the next state-wide Regional Housing Needs Assessment (RHNA) process, which must be completed by 2012.

Actions to Address Climate Change in the Santa Clarita Valley

The City of Santa Clarita and County of Los Angeles have been working cooperatively on the *One Valley One Vision* General Plan Update since 2000, well before climate change was identified as a local planning issue and before adoption of AB 32. However, the land use plan developed for the Santa Clarita Valley was designed to address the related issues of urban sprawl, traffic congestion, air quality, watershed management, and open space preservation, in a manner that also addresses some of the issues of global warming. Specifically, the General Plan and Area Plan elements for land use, circulation, and open space and conservation set forth the following programs and objectives for the Valley:

1. Delineation of areas designated for urban use and non-urban (rural) use in order to limit urban sprawl into outlying hillside areas and to encourage urban infill development;

2. Provision of incentives for infill development and revitalizing older commercial areas, through adoption of a Mixed Use designation in the City of Santa Clarita, and by increasing standards for density and floor area ratio in urban areas, which will allow greater land use intensity and mixing of residential with commercial and service uses;

3. Designation of Mixed Use designations in the City of Santa Clarita adjacent to transit centers, including Metrolink stations and the McBean Transfer Facility, in order to concentrate mixed use, higher intensity development within walking distance of public transit;

4. Inclusion of non-residential "activity areas" within urban residential land use designations, to allow location of uses serving a local clientele, such as small groceries, dry cleaners, and personal services, within walking distance of adjacent neighborhoods without approval of a General Plan or Area Plan Amendment;

5. Development of continuous and connected paseo and bikeway systems that link neighborhoods to public transit, parks, schools, business and community service areas;

6. Incorporation of planning policies to increase local bus service and improve pedestrian access to transit stops;

7. Preservation of the Santa Clara River watershed through acquisition of open space along the river and its tributary streams, and designation of low-intensity uses within the 100-year flood plain;

8. Continuation of the City's urban forestry program that has resulted in the planting of 50,000 trees to date and will continue to provide for tree planting and maintenance throughout the Valley;

9. Adoption of a goal to create two jobs for every new dwelling unit, and to balance job growth with housing growth in various locations throughout the Santa Clarita Valley to reduce commuting distances to employment;

10. Continuation of the City's open space acquisition policies to create a continuous greenbelt around the Valley and along the Santa Clara River, supported by a City voter-approved ballot measure to provide funding for land purchases;

11. Adoption by Los Angeles County of ordinances to promote use of green building materials and techniques, low impact development for stormwater control at the source, and drought-tolerant landscaping.

Additional Programs & Policies to Address Climate Change

The challenge of addressing climate change at the local level is being met by cities and communities throughout the country, and more information about successful programs is becoming available. Response to climate change by local jurisdictions will require a two-pronged approach: first, adopting measures to reduce energy consumption and GHG emissions; and second, identifying measures to adapt to changing climatic conditions, which may include water and power shortages in combination with drought. The California Department of Water Resources (DWR) has urged a state-wide reduction in water consumption as a means of reducing energy expended to pump, treat, heat,

de-salt, and discharge water. According to the California Energy Commission, conserving one acre foot of water (enough to serve two families of four for one year) reduces GHG emissions by approximately one metric ton. Scientific evidence indicates that even if GHG emissions were to cease immediately, the atmosphere will continue to warm for the greater part of this century, resulting in changes to snowpack, runoff, drought conditions, fires, and other impacts as discussed above. At the same time, California's population is expected to grow to 48 million people by 2030. Due to these factors, DWR will continue to emphasize water conservation and water banking throughout the State as primary tools to protect the state's water supply in response to global warming.

A large portion of the GHG emissions in California are associated with buildings, because they use so much energy for lighting, cooling and heating, and water for landscape irrigation. Several new laws are pending in the California Legislature to mandate green building practices in new building construction. Economists have calculated that buildings could cut 30 percent of their emissions and save money at the same time, through use of low-energy light bulbs, intelligent lighting systems, enhanced insulation, energy-efficient heating and cooling systems, and use of recycled steel. One way to decrease cooling costs is through installation of shade trees around buildings and parking lots to reduce the "heat island" effect of pavement and hard surfaces.

A necessary step for the Santa Clarita Valley jurisdictions to comply with AB 32 will be completion of separate GHG inventories for the City and County. The purpose of these inventories is to identify and categorize the major sources and quantities of GHG emissions being produced by the City's and County's residents, businesses, and municipal operations. Based on the requirements of AB 32, 1990 will be used as the baseline year for the inventory, and will serve as a reference against which to measure the City's and County's progress towards reducing GHG emissions over time. Goals and policies have been included in this Element to address the issues of GHG emissions and climate change, and implementation measures have been included outlining steps to complete separate Climate Action Plans for the City and County.

XI. PARK & RECREATION RESOURCES & FACILITIES

County & State Parks

The County owns and operates 13 parks in the planning area, totaling 578 acres and serving various communities throughout the Valley. County parks are classified as follows:

- Neighborhood parks, generally from five to 10 acres in area, provide active recreational areas intended to serve a population of up to 5,000 within a half-mile radius. There are seven County-owned neighborhood parks in the planning area (Chesebrough, Del Valle, Hasley Canyon, Jake Kuredjian, Pico Canyon, Plum Canyon/David March, and Northbridge).

- Community parks are generally 10-40 acres, provide both passive and active recreation facilities, and are intended to serve a population of up to 20,000 within a two-mile radius. There is one County-owned community park in the planning area (Richard Rioux Park).

- Regional parks are generally over 50 acres, and offer a wide range of specialized recreational activities to serve the a population within a one-hour's drive. There are two County regional parks in the planning area: Val Verde Park and William S. Hart Park.

- Originally built in the 1920s, Val Verde Park provides a focal point for many community activities. The County has recently undertaken an expansion of Val Verde Park by purchasing a lot near the park entrance, and providing new football fields, basketball courts, tennis courts, restrooms, playground, and landscaping.

- Part of the Natural History Museum of Los Angeles County, William S. Hart Park is the former home and ranch of William S. Hart, silent film cowboy star and director. The park includes a museum within a Spanish Colonial Revival style mansion, which contains original furnishings, a collection of western art, mementos of early Hollywood, and Native American artifacts. In addition, there is a furnished 1910 ranch house which is open for unguided tours.

- Recreation parks are generally at least 50 acres and are designed to handle large-scale multiple participant sports programs and tournaments. Within the planning area, Castaic Sports Complex is the only County park in this category.

- Reservations are 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. Within the planning area, Vasquez Rocks is a County facility in this category.

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 development projects in the area will also be required to provide sports fields to meet future facility needs.

There are three State parks located within the planning area, which are operated by the County: Castaic Lake Recreation Area, Placerita Canyon State Park, and Vasquez Rocks State Park. State parklands total approximately 13,476 acres within the planning area. County and State parks are listed on Table CO-2 and shown on Figure CO-8.

City Parks & Recreation Planning

The City's first General Plan after incorporation, adopted in 1991, contained a Parks and Recreation Element as an optional element. 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. The Element established standards for community and neighborhood parks, included an inventory of parks and other public recreational facilities, established a trail plan, included a needs assessment, and established goals and policies for park planning.

The City adopted a Parks, Recreation and Open Space Master Plan in 1995, setting forth specific strategies for upgrading existing facilities and developing new parks and trails. The 1995 Plan identified park classifications for neighborhood parks, metro/community parks, and special use parks, and proposed a goal of four acres of parkland per 1,000 residents.

In 2007, the City initiated an update of a Parks, Recreation and Open Space Master Plan (Master Plan). Since the first Master Plan was adopted in 1995, the City had added 240 acres to the park system, constructed 165 acres of improved parkland, and secured land for Central Park. New parks included an activities center, aquatic center, gymnasium, and community center. The City also constructed 33 miles of trails, and set aside over 3,000 acres of open space.

The City and the County have adopted park fee ordinances pursuant to the State's Quimby Act (Government Code 66477), which allows local agencies to collect impact fees from residential subdividers to finance development of new parks to serve residents. In order to collect these fees, state law requires that the agency have an adopted General Plan with standards for park and recreational facilities. Section 16.15 of the City's Municipal Code allows developers to dedicate and build parks to serve residents of a new development, or to pay in-lieu fees to the City for parkland acquisition and development.

In conformance with the Quimby Act, the City's park fee ordinance requires dedication or payment of in-lieu fees for a minimum of three acres of parkland for each 1,000 residents. However, the City's General Plan standard calls for parks to be provided at a ratio of 5 acres per 1,000 residents. The City's General Plan standard will remain five acres per 1,000 after the General Plan is updated through the *One Valley One Vision* planning effort, and additional funding sources will be identified to acquire and develop parkland above that financed from park impact fees in order to meet the General Plan standard. Based on current parks facilities in the City, there are approximately 1.5 to two acres of developed parkland per 1,000 residents in the City as of 2007, with 246 acres of developed park space and about 173 acres of passive park land. In addition, the City has purchased land for preservation of natural open space along the Santa Clara River and as a greenbelt surrounding urban areas.

The City of Santa Clarita Parks, Recreation and Community Services Department operates 20 City parks totaling 246 acres and ranging in area from about 0.5 to 80 acres, which provide a wide range of recreational facilities. City standards for neighborhood and community parks are similar to the categories used by the County, described above. Based on

these categories, there are 12 neighborhood parks within the City and five community parks, including Bouquet Canyon, Bridgeport, Canyon Country, Valencia Heritage, and Newhall Parks. Special use and passive parks are also included in the City's Master Plan, and are generally used for open space greenbelts and vista points. These parks include Rivendale, Sand Canyon River Park, Lost Canyon Park, Pioneer Park, and several others. There are dozens of passive and special use parks in the City. The City's Central Park is a multi-use park intended to serve the entire Santa Clarita Valley, and is classified as a regional park. This park provides facilities for league sports, cultural enrichment, and passive open space. The Newhall Community Center, which opened in 2006, is a special use facility.

In addition to acquiring and developing new park land, the City continues to expand and upgrade sports and recreational facilities at its existing parks. In 2007, the City awarded a design contract for a major expansion to the existing sports complex in the Centre Pointe Business Park, which will include an 18,000-square-foot gymnasium, a remodeled and expanded skate park, and multi-use fields on 15 acres.

The City's updated Parks, Recreation, and Open Space Master Plan will serve as a guiding document for park planning, identifying opportunities and strategies to meet service needs, and outlining funding strategies in the City. Due to the concurrent planning efforts on this Master Plan, this Element will not serve as the City's Master Plan but will instead focus on broad policy issues relating to park planning and more particularly on joint goals for the City and County to pursue in order to coordinate efforts on open space preservation and park development.

A summary of existing park and open space land is included in Table CO-2, and shown on Figure CO-8. The City has also acquired almost 260 acres of additional land for future parks or expansion of existing parks which are not yet fully developed. To supplement City and County park facilities, 12 school facilities have been made available for community recreational purposes through approval of joint use agreements. National Forest areas also provide recreational facilities available to Valley residents, including hiking trails and campgrounds. Privately-owned golf courses, which provide scenic open space as well as recreation, are also listed.

Joint Park Planning Issues

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. In addition, a need has been identified to provide additional parks and recreational facilities in some of the older, underserved areas of the Valley.

Table C0-2: Inventory of Park & Open Space Lands in Santa Clarita Valley (2008)

Facility	Acreage	Location	Owner/Responsible Agency
City Parks			
Almendra	4.3	Valencia	City
Begonias Lane	4.2	Canyon Country	City
Bouquet Canyon	10.5	Bouquet Canyon	City
Bridgeport	16.0	Valencia	City
Canyon Country	19.3	Canyon Country	City
Central Park	80.0	Saugus	City
Circle J Ranch	5.3	Saugus	City
Creekview	5.0	Newhall	City
Newhall	14.3	Newhall	City
North Oaks	2.3	Canyon Country	City
Oak Spring Canyon	5.7	Canyon Country	City
Old Orchard	5.4	Valencia/Newhall	City
Pamplico	7.6	Saugus	City
Santa Clarita	7.3	Saugus	City
Valencia Glen	7.3	Valencia	City
Valencia Heritage	17.2	Valencia	City
Valencia Meadows	6.1	Valencia	City
Caravahlo/SC Sports Complex	22	Centre Pointe	City
Todd Longshore	5.6	Canyon Country	City
Veterans Historical Plaza	0.5	Newhall	City
County Parks			
Chesebrough	5.1	Valencia	County
Del Valle	5.8	Castaic	County
Hasley Canyon	5.4	Castaic	County
Jake Kuredjian	5.0	Stevenson Ranch	County
Northbridge	9.8	Valencia	County
Pico Canyon	18.0	Stevenson Ranch	County
David March (Plum Canyon)	12.9	Stevenson Ranch	County
Richard Rioux	15.5	Stevenson Ranch	County
Val Verde	57.6	Val Verde	County
Castaic Regional Sports Complex	51.0	Castaic	County
William S. Hart Park	224.3	Newhall	County
Tesoro Adobe Park	2.2	Valencia	County
Ed Davis Park	168.0	Towsley Canyon	County/Santa Monica Mountains Conservancy
Passive Parks			
Chevron-Pioneer	4.6	Newhall	
Lost Canyon	41.2	Canyon Country	City
Mint Canyon	18.6	Canyon Country	City
Rivendale	64.0	Towsley Canyon	City
River Park	24.3	Canyon County	City

Facility	Acreage	Location	Owner/Responsible Agency
Sand Canyon River	20.0	Sand Canyon	City
Summit Park	46.16	Valencia	Summit Homeowners Association
State Parks/Recreation Areas			
Castaic Lake Recreation Area	8700.0	Castaic	State/County
Placerita Canyon Nature Area	341.0	Placerita Canyon	State/County
Vasquez Rocks	905.0	Agua Dulce	State/County
Nature Preserve and Other Open Space			
Santa Clarita Woodlands (includes Ed Davis Park)	4,000.0	Towsley Canyon/ Santa Susana Mountains	Santa Monica Mountains Conservancy (SMMC)
Whitney Canyon	442.0	Entrance at end of San Fernando Road near Highway 14	City and Mountains and Recreation Conservation Authority (MRCA)
Elsmere Canyon	400.0	Near intersection of San Fernando Rd and Sierra Hwy	SMMC
Mentryville	800.0	Pico Canyon	MRCA
Santa Clara River Open Space	2,000.0	Along Santa Clara River	City
Wagoner Open Space	412.0	Canyon Country (1 mile east of City boundary, bisected by SR-14)	City
Quigley Canyon Open Space	158.0	East Newhall	City
Golden Valley Ranch	901.0	East of SR-14 from Golden Valley Road to Placerita Canyon Road	County
Placerita Canyon Open Space	140.0	Adjacent to Placerita Canyon State Park	City
Michael D. Antonovich Open Space	480.0	East/Rice Canyon. Trailhead along Old Road	MRCA
Castaic Open Space	335.0	Castaic	MRCA
Wilson Canyon Ranch	240.0	Castaic	MRCA
Newhall High Country Open Space	140.0	South of Newhall	SMMC/SCWRCA
Round Mountain	136.4	Valencia near I-5 and Magic Mtn. Parkway	City
National Forest Land			
Angeles National Forest Los Padres National Forest	151,827.0	North and southeast of developed portions of Valley	United States Forest Service
Planned Communities Open Space			
Newhall Ranch	6,000.0	High country west of I-5, south of SR-126	Newhall Ranch High Country Recreation and Conservation Joint Powers Agency

Facility	Acreage	Location	Owner/Responsible Agency
Private Golf Courses			
Valencia Country Club	194.0	Valencia	Private
Vista Valencia	51.0	Valencia	Private
Robinson Ranch	344.0	Santa Clarita	Private
TPC at Valencia	226.0	Valencia	Private
Utility Facilities/Corridors			
Castaic Lake Water Agency Conservatory Garden and Learning Center	48.7	Bouquet Canyon	Cataic Lake Water Agency
Cemetaries			
Eternal Valley Memorial	56.0	Santa Clarita	Private

XII. OPEN SPACE RESOURCES

Legal Requirements for Open Space Preservation

State law contains extensive provisions directing preservation of open space by local jurisdictions. In enacting these statutes, the Legislature made the following findings: (1) the preservation of open-space land is necessary not only for the maintenance of the economy of the state, but also for the assurance of the continued availability of land for the production of food and fiber, for the enjoyment of scenic beauty, for recreation and for the use of natural resources; (2) discouraging premature and unnecessary conversion of open-space land to urban uses is a matter of public interest and will be of benefit to urban dwellers because it will discourage noncontiguous development patterns which unnecessarily increase the costs of community services to community residents; (3) the anticipated increase in the population of the state demands that cities, counties, and the state at the earliest possible date make definite plans for the preservation of valuable open-space land and take positive action to carry out such plans by the adoption and strict administration of laws, ordinances, rules and regulations as authorized by this chapter or by other appropriate methods; (4) in order to assure that the interest of all its people are met in the orderly growth and development of the state and the preservation and conservation of its resources, it is necessary to provide for the development of statewide coordinated plans for the conservation and preservation of open-space lands; and (5) cities and counties must recognize that open-space land is a limited and valuable resource which must be conserved wherever possible.

Based on these findings, the California Legislature added the requirement for an Open Space Element to State law in 1970. Government Code Section 65302(e) states: [The general plan shall include] an Open Space Element as provided in Article 10.5 (commencing with [Government Code] Section 65560). Along with the Housing Element, the Open Space Element has a clear statutory intent and, next to Land Use, is broadest in scope. Because of this breadth, open space issues overlap those of several other elements. For example, the Land Use Element's issues of agriculture, natural resources, recreation, enjoyment of scenic beauty and public lands are covered by open space provisions. "Open space for the preservation of natural resources" and "open space used for the managed production of resources" encompass the concerns of the Conservation Element. "Open space for public health and safety" covers issues similar to those found in the Safety Element.

As explained in the introductory section of this Element, the State-mandated Elements of Open Space and Conservation have been combined into a single Element in this Area Plan update, because of the close relationship between the needs to conserve natural resources and open space. In various sections of this Element dealing with biological, historical, scenic, water, and other resources, the need to establish adequate open space to meet conservation goals has been discussed. Therefore, it was determined to be beneficial to plan open space protection in a coordinated manner with resource conservation and to include goals and policies for each of these issues into a single document.

Open Space Designations in the Santa Clarita Valley

State law defines "open-space land" as any parcel or area of land or water which is essentially unimproved and devoted to specified open-space uses and which is designated on a local or regional open space plan. Within the Santa Clarita Valley, the following types of areas have been designated for open space preservation pursuant to State law:

1. Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, lake shores, banks of rivers and streams, and watershed lands.

2. Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; and areas containing major mineral deposits, including those in short supply.

3. Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lake shores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

4. Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

State law also requires that every local open space plan shall contain an action program consisting of specific programs which the legislative body intends to pursue in implementing its open space plan. Within the planning area, both the City and County have taken numerous actions to preserve open space land for preservation of historic and cultural resources, biological resources, park and recreation use, visual and aesthetic resources, aggregate resources, flood control and watershed protection, and protection of the public from hazardous conditions. These measures have been described in the previous sections of this Element, and in the Land Use and Safety Elements. In addition to the open space lands set aside by the City and County, there are several State parks and recreation areas located within the planning area.

Open Space Preservation Efforts

The City of Santa Clarita began planning for preservation of open space shortly after its incorporation in 1987. The Santa Clara River Recreation and Water Feature Study was adopted by the City in 1991. This document was the City's first step in planning for recreational use of the Santa Clara River, and formed the basis for development of the current Santa Clara River trail. The study envisioned a continuous river environment encompassing active and passive parks, natural open space, and riverfront community centers and retail establishments, linked by a system of bikeways, paseos, and multi-use trails. The study also identified the City's goal to coordinate with adjacent jurisdictions to develop a trail network along the Santa Clara River that would link the San Gabriel Mountains to the Pacific Ocean.

In 1995 the City adopted a Parks, Recreation and Community Services Master Plan, containing an inventory of existing facilities and establishing a plan for park development through 2005. The City began updating this Plan in 2007.

The City of Santa Clarita's Open Space Acquisition Plan (OSAP) was adopted in 2002 to create a systematic and objective mechanism for evaluating and acquiring open space. This plan was intended to assist in the creation of a "green belt" surrounding the City of Santa Clarita to improve and expand wildlife habitat and corridors, and to provide a framework for the City to evaluate, acquire, and maintain the most beneficial parcels within and surrounding the Santa Clarita Valley for preservation as open space. The OSAP also identified a goal of acquiring open space to augment the Rim of the Valley open space and trail system.

Since its incorporation in 1987, the City of Santa Clarita has acquired more than 3,000 acres of land for the purpose of preservation of natural habitat and open space. The City Council has focused on preserving a greenbelt of open space around the City's incorporated boundaries, and about 50

percent of that greenbelt was completed as of 2007. The City also partnered with the Santa Monica Mountains Conservancy (SMMC) to pool resources for open space acquisition, as in the 2002 joint acquisition of 442 acres of land in Whitney Canyon, adjacent to Elsmere Canyon at the end of Newhall Avenue near State Route 14. Preservation of this land will contribute to the open space greenbelt around the Valley, provide for extension of the Rim of the Valley Trail Corridor, and preserve this canyon in perpetuity for future generations. In 2005, the City required dedication of the 907-acre Golden Valley Ranch open space area from PacSun, Inc., as a condition of approval on the developer's projects. This land is located east and south of State Route 14 and runs generally from Golden Valley Road south to Placerita Canyon Road. Other examples of preserved open space are listed on Table CO-2.

In another innovative partnership, the County teamed with a developer to preserve the 6,000 acres of the Newhall Ranch high country, located between the City limits and the Ventura County line. The Newhall Ranch High Country Recreation and Conservation Joint Powers Agency was formed to maintain this open space land.

On March 7, 2007, the donation by the property owner of 400 acres of Elsmere Canyon to the Mountains and Recreation Conservation Authority (MRCA) for use as an open space preserve received final approval. Elsmere Canyon is a natural, riparian area that contains vital links between the Angeles National Forest, Placerita Canyon Nature Center and Whitney Canyon for the wildlife corridor, connecting the San Gabriel, Santa Susana and Santa Monica mountains. The canyon contains waterfalls, rolling hills, riparian habitats, coastal sage and oak woodlands, and significant ecological, cultural and historical treasures. Another 800 acres of the canyon are deemed in need of protection in the future.

The SMMC and its affiliate agency, the MRCA, own and manage more than 55,000 acres of public land in Southern California, of which over 7,000 acres are located within the planning area. One of these properties is the historic town of Mentryville and more than 3,000 surrounding acres, which was donated to the Mountains Recreation and Conservation Authority by Chevron USA in 1995.

The Santa Clarita Watershed Recreation and Conservation Authority was formed in 1997 by the SMMC and the City of Santa Clarita as an independent government agency to improve and maintain 442-acre Whitney Canyon Park, which includes park improvements, shutting of old oil wells, and enhancing habitat use as a wildlife corridor. This Authority may be used to maintain other joint acquisitions of open space land in the future.

In 2005, a proposed Open Space and Parkland Preservation district was voted down by the City's voters by a narrow margin. However, open space proponents continued to promote the measure throughout the community, with a successful measure passing two years later. In July, 2007 the voters of the City of Santa Clarita voted by a margin of 69 percent to 31 percent to support formation of a new Open Space Preservation District within the City. The City Council had proposed the district formation to help increase the amount of preserved open space in and around the Santa Clarita Valley. The voters approved an annual assessment to be levied on each homeowner and property owner within the City, with an average single family home paying $25 per year, which is estimated to generate about $1.5 million per year for the next 30 years. The vote also included possible future increases to be approved by the City Council after a public hearing. The District will allow the City to purchase land to be held in perpetuity for the purpose of open space preservation. Funds generated from the annual assessments will be overseen by five member Financial Accountability and Audit Panel to be appointed by the City Council.

The City plans to use bond funding supported by revenue from the annual open space assessments to purchase up to $34 million in open space lands throughout the Santa Clarita Valley. Plans for open space acquisition include more community parks, preservation of biological habitat and geological resources, and creation of open space. In addition, the City plans to acquire land to complete an open space greenbelt around the Santa Clarita Valley. The City hopes to work cooperatively with the County, land conservancies, and other agencies to effectively leverage open space funds with State grants and other funding sources to provide for shared open space opportunities to benefit residents of the entire Valley. An example of such a successful partnership in the past was the purchase of the 442-acre Whitney Canyon Ranch, a partnership between the City and the SMMC operating as a joint powers authority with State bond funds.

Table CO-2 contains an inventory of existing open space land within the Santa Clarita Valley, including both City and County parkland, resource protection areas, private open space, and open space land controlled by other agencies.

Future Directions for Open Space

The City and the County will continue to pursue their goal of creating an open space greenbelt encircling the Santa Clarita Valley, protecting important river and canyon habitats, maintaining the scenic hillsides and ridgelines that enhance community character in the Santa Clarita Valley, and conserving the Santa Clara River watershed. The 2007 Open Space District formation will be a powerful funding tool in achieving these goals. In addition, the City and County will continue to seek partnerships with the State, conservation agencies, and other entities as deemed appropriate in order to maximize funding opportunities and benefit all citizens in the Valley through preservation of open space.

XIII. RECREATIONAL TRAILS

Public Resources Code Section 5076 requires that "In developing the open-space element of a general plan as specified in subdivision (e) of Section 65302 of the Government Code, every city and county shall consider demands for trail-oriented recreational use and shall consider such demands in developing specific open-space programs. Further, every city, county, and district shall consider the feasibility of integrating its trail routes with appropriate segments of the state system."

In compliance with this State requirement, both the City and the County have developed trail plans for adoption as part of their General Plans. In 2007, the County Board of Supervisors approved an updated trails map for the Santa Clarita and Antelope Valleys. The map was five years in the making, and was developed based on input from the Santa Clarita Valley Trails Advisory Committee. Members of the Advisory Committee walked, biked, drove and rode horses on potential trails with global positioning systems to finalize recommendations for trails to be included on the map. The trails were planned to connect different communities and link with other trails across county and city lines, including trails in Kern and Ventura Counties and within U. S. Forest Service land.

The County has been a strong proponent of trail use and development. For the last 15 years, Supervisor Michael D. Antonovich has sponsored annual trail rides to raise awareness about County trails that are available to all residents. Areas such as Towsley Canyon and Placerita Canyon have miles of trails that link City and County areas and are available to equestrians as well as hikers and non-motorized mountain bikes. In 2006, the City received a $150,000 grant from Supervisor Antonovich's District's Competitive Trails and Cities Grant Program to finance an extension of the Sand Canyon multi-use trail to connect north toward the planned extension of the 14.5-mile-long Santa Clara River Trail.

The City has been planning for an interconnected trail system since shortly after its incorporation in 1987. In 1991, even before adoption of its first General Plan, the City adopted the Santa Clara River Recreation and Water Feature Study, which emphasized the need for a multi-use trail system along the Santa Clara River that would serve as "a continuous trail system that connects recreational features along the river corridor, as well as local and regional destination points." In addition to recommending the river trail system, the study recommended removing fences and barriers along the river to provide public access to the river trail, planning bicycle routes and pedestrian walkways from residential neighborhoods to the river, directional signs for pedestrians, and providing pedestrian and trail links between the north and south sides of the river. The study envisioned a river trail that would extend from the San Gabriel Mountains to the Pacific Ocean. The Santa Clara River runs along the bottom of the Santa Clarita Valley, and about seven and a half miles are within the City limits. The City had about five miles of the trail completed or under construction as of 2007, and is planning to extend the trail further to the east and west. All of the other trails within the City are planned to connect to the river trail, which also functions as a wildlife corridor. The City successfully petitioned the State Recreational Trails Committee to include the Santa Clara River as a trail corridor on the State trail plan, which has increased the project's success in competing for grant funding.

The City also included trail plans in the 1991 General Plan and 1995 Parks, Recreation and Community Services Master Plan. The City has developed standards for hard surface trails, equestrian trails, soft surface trails, pedestrian bridges, and connection and access points. (Trail standards are discussed further in the Circulation Element). The City has developed public information brochures with

maps, available on the City's website, for residents seeking information on paseo systems and regional recreational trails. City trails are open from sunrise to 10:00 p.m., and bike lockers provided at the three Metrolink stations are available for trail users. The City has also developed trailheads with parking and services to provide convenient access to trails.

The City funds trail construction on a project-by-project basis by combining general fund money with grant applications. Since 1995 the City has received $12-$13 million in grants used for trail construction, including both State and federal funds. For example, an MTA grant was used to fund design and construction of the continuation of the Santa Clara River trail from the South Fork to Interstate 5. The City and County also require developers to construct trail segments within the project boundaries of new development, based on adopted trail plans, and to provide connections to regional trails where required.

City staff attempts to coordinate with County and federal agencies and developers on projects outside the City limits, including U.S. Forest Service lands, to ensure that the City's trail systems connect with regional trails. One of the City's specific goals is to tie its trail system in with the Pacific Crest Trail, which passes through Agua Dulce near Vasquez Rocks on its north-south path from the U.S.-Canada border to the U.S.-Mexico border. The City and County will continue to cooperate with neighboring agencies and stakeholders to create additional regional trail segments.

With wildfires, floods, and general forest growth conditions, trail maintenance is a constant need throughout the City's trail systems. The City and County are fortunate to benefit from the labors of a dedicated volunteer trail maintenance crew that helps staff maintain nature trails.

Figure CO-9 shows regional recreational trails within City and County areas throughout the planning area.

XIV. SUMMARY OF CONSERVATION AND OPEN SPACE NEEDS IN THE SANTA CLARITA VALLEY

Based on the existing conditions and issues outlined in the background sections of the Conservation and Open Space Element, planning needs for the Santa Clarita Valley are summarized below. Policies and objectives in Part 2 of the element have been developed to address these needs.

1. Strive to balance the needs of new residents, businesses and employment centers with the community's goals for retention of open space and preservation of natural resources.

2. Limit losses of valuable topsoil by erosion, construction, and development practices.

3. Maintain and protect the scenic backdrop of hills and ridgelines around and within the Valley, to preserve community character.

4. Protect the scenic beauty of the Santa Clarita Valley's canyons, woodlands, water bodies, and unique geological features, to enhance the sense of place.

5. Allow recovery of aggregate resources while minimizing impacts to the community and environment, and ensuring reclamation of mined lands.

6. Protect sensitive habitat, including wildlife corridors, endangered species, and the National Forest, from the adverse impacts of development, including noise, pollution, light, pets, off-road vehicles, and invasive species.

7. Effectively manage stormwater at the source, to promote infiltration into local aquifers, minimize flood impacts downstream, and reduce drainage infrastructure costs.

8. Require water conservation in all aspects of development, with particular emphasis on landscape irrigation.

9. Work with local water agencies to increase opportunities for use of reclaimed water.

10. Protect and enhance water quality within the Santa Clara River and watershed.

11. Cooperate with landowners and affected districts to assist in mitigating perchlorate contamination in the East Subbasin.

12. Protect culturally significant sites and districts throughout the valley, including Native American sites and those associated with exploration, settlement, and filming.

13. Contribute to a regional reduction in greenhouse gas emissions through land use planning and transportation strategies, and through reductions in energy consumption in buildings and site development, with a focus on older and existing buildings.

14. Recognizing that air quality is regional in nature, protect residents, especially sensitive receptors, from the harmful health effects of air pollution to the extent feasible.

15. Ensure that Santa Clarita Valley residents have access to adequate park and recreation facilities, and provide adequate facilities for all age groups.

16. Develop a continuous network of multi-use trails within the Valley and connecting to adjacent forest and river areas, integrating both recreational and mobility components.

17. Preserve and protect open space throughout the Valley, focusing on completion of the open space greenbelt surrounding urbanized areas, and along the Santa Clara River.

18. Reduce vehicle miles traveled to locations outside the Santa Clarita Valley, as well as the number of vehicle trips within the Valley, through the application of land use strategies that incorporate a sustainable mix of land uses and transit and pedestrian opportunities.

XV. GOALS, OBJECTIVES, AND POLICIES

Goal CO-1: Responsible Management of Environmental Systems

A balance between the social and economic needs of Santa Clarita Valley residents and protection of the natural environment, so that these needs can be met in the present and in the future.

Objective CO-1.1

Protect the capacity of the natural "green" infrastructure to absorb and break down pollutants, cleanse air and water, and prevent flood and storm damage.

- **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-1.1.2:** In making land use decisions, consider the impacts of human activity within watersheds and ecosystems, to maintain the functional viability of these systems.

- **Policy CO-1.1.3:** In making land use decisions, encourage development proposals that preserve natural ecosystem functions and enhance the health of the surrounding community.

Objective CO-1.2

Promote more sustainable utilization of renewable resource systems.

- **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:

  a. Through the environmental and development review processes, consider development proposals within the context of renewable resource systems and evaluate potential impacts on a system-wide basis (rather than a project-specific basis), to the extent feasible;

  b. In planning for new regional infrastructure projects, consider impacts on renewable resources within the context of interrelationships between these systems; and

  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-1.2.2:** Working with other agencies as appropriate, develop and apply models and other tools for decision-making to support the sustainability of renewable systems.

Objective CO-1.3

Conserve and make more efficient use of non-renewable resource systems, such as fossil fuels, minerals, and 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-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-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.

Objective CO-1.4

Minimize the long-term impacts posed by harmful chemical and biological materials on environmental systems.

- **Policy CO-1.4.1:** In cooperation with other appropriate agencies, identify pollution sources and adopt strategies to reduce emissions into air and water bodies.

- **Policy CO-1.4.2:** In cooperation with other appropriate agencies, abate or remediate known areas of contamination, and limit the effects of any such areas on public health.

- **Policy CO-1.4.3:** Encourage use of non-hazardous building materials, and non-polluting materials and industrial processes, to the extent feasible.

- **Policy CO-1.4.4:** In cooperation with other appropriate agencies, continue to develop and implement effective methods of handling and disposing of hazardous materials and waste.

Objective CO-1.5

Manage urban development and human-built systems to minimize harm to ecosystems, watersheds, and other natural systems, such as urban runoff treatment trains that infiltrate, treat and remove direct connections to impervious areas.

- **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-1.5.2:** Design and manage public urban infrastructure systems to reduce impacts to natural systems.

- **Policy CO-1.5.3:** Consider life-cycles for buildings, development patterns, and uses, and their long-term effects on natural systems, through the following measures:

  a. Through the environmental review and development review processes, consider the impacts of new development on renewable systems through various phases including construction, use and operation, potential reuse, cessation of use, demolition, and reuse or restoration of the development site; and

  b. Ensure that mitigation measures and conditions of approval intended to protect natural systems are adequately funded and monitored for the required timeframe.

- **Policy CO-1.5.4:** Seek ways to discourage human behavior that may be detrimental to natural systems and to encourage environmental responsibility, through education, incentives, removing barriers, enforcement, and other means as practicable and feasible.

- **Policy CO-1.5.5:** Promote concentration of urban uses within the center of the Santa Clarita Valley through incentives for infill development and rebuilding, in order to limit impacts to open space, habitats, watersheds, hillsides, and other components of the Valley's natural ecosystems.

- **Policy CO-1.5.6:** Through the development review process, consider the impacts of development on the entire watershed of the Santa Clara River and its tributaries, including hydromodification.

- **Policy CO-1.5.7:** Consider the principles of environmental sustainability, trip reduction, walkability, stormwater management, and energy conservation at the site, neighborhood, district, city, and regional level, in land use decisions.

- **Policy CO-1.5.8:** Consider environmental responsibility in all procurement decisions, including purchasing policies and capital projects.

Objective CO-1.6

To the extent feasible, minimize long-term effects of development on natural systems and adjust development strategies as needed to promote sustainability.

- **Policy CO-1.6.1:** Identify environmental conditions that represent a healthy, sustainable community.

- **Policy CO-1.6.2:** Use Geographic Information Systems, modeling, and other tools to indicate the locations of natural systems such as groundwater recharge areas, floodplain and floodway areas, oak tree woodlands, Significant Ecological Areas, and plant and animal species habitat.

- **Policy CO-1.6.3:** Provide information on the condition of natural systems to decision makers as part of the decision-making process regarding land use and development.

Goal CO-2: Geological Resources

Conserve the Santa Clarita Valley's hillsides, canyons, ridgelines, soils, and minerals, which provide the physical setting for the natural and built environments.

Objective CO-2.1

Control soil erosion, waterway sedimentation, and airborne dust generation, and maintain the fertility of topsoil.

- **Policy CO-2.1.1:** Review soil erosion and sedimentation control plans for grading activities related to development, where appropriate to ensure mitigation of potential erosion by water and air.

- **Policy CO-2.1.2:** Promote conservation of topsoil on development sites by stockpiling for later reuse, where feasible.

- **Policy CO-2.1.3:** Promote soil enhancement and waste reduction through composting, where appropriate.

Objective CO-2.2

Preserve the Santa Clarita Valley's prominent ridgelines and limit hillside development to protect the valuable aesthetic and visual qualities intrinsic to the Santa Clarita Valley landscape. (Guiding Principle #7)

- **Policy CO-2.2.1:** Locate development and designate land uses to minimize the impact on the Santa Clarita Valley's topography, minimizing grading and emphasizing the use of development pads that mimic the natural topography in lieu of repetitive flat pads, to the extent feasible. (Guiding Principle #8)

- **Policy CO-2.2.2:** Ensure that graded slopes in hillside areas are revegetated with native drought tolerant plants or other approved vegetation to blend manufactured slopes with adjacent natural hillsides, in consideration of fire safety and slope stability requirements.

- **Policy CO-2.2.3:** Preserve designated natural ridgelines from development by ensuring a minimum distance for grading and development from these ridgelines of 50 feet, or more if determined appropriate by the reviewing authority based on site conditions, to maintain the Santa Clarita Valley's distinctive community character and preserve the scenic setting.

- **Policy CO-2.2.4:** Identify and preserve significant geological and topographic features through designating these areas as open space or by other means as appropriate.

- **Policy CO-2.2.5:** Promote the use of adequate erosion control measures for all development in hillside areas, including single family homes and infrastructure improvements, both during and after construction.

- **Policy CO-2.2.6:** Encourage building and grading designs that conform to the natural grade, avoiding the use of large retaining walls and build-up walls that are visible from offsite, to the extent feasible and practicable.

Objective CO-2.3

Conserve areas with significant mineral resources, and provide for extraction and processing of such resources in accordance with applicable laws and land use policies.

- **Policy CO-2.3.1:** Identify areas with significant mineral resources that are available for extraction pursuant to Zoning Ordinance requirements.

- **Policy CO-2.3.2:** Consider appropriate buffers near mineral resource areas that are planned for extraction, to provide for land use compatibility and prevent the encroachment of incompatible land uses.

- **Policy CO-2.3.3:** Through the review process for any mining or mineral extraction proposal, ensure mitigation of impacts from mining and processing of materials on adjacent uses or on the community, including but not limited to air and water pollution, traffic and circulation, noise, and land use incompatibility.

- **Policy CO-2.3.4:** Ensure that mineral extraction sites are maintained in a safe and secure manner after cessation of extraction activities, which may include the regulated decommissioning of wells, clean-up of any contaminated soils or materials, closing of mine openings, or other measures as deemed appropriate by the agencies having jurisdiction.

- **Policy CO-2.3.5:** Promote remediation and restoration of mined land to a condition that supports beneficial uses, which may include but are not limited to recreational open space, habitat enhancement, groundwater recharge, or urban development.

Goal CO-3: Biological Resources

Conservation of biological resources and ecosystems, including sensitive habitats and species.

Objective CO-3.1

In review of development plans and projects, encourage conservation of existing natural areas and restoration of damaged natural vegetation to provide for habitat and biodiversity.

- **Policy CO-3.1.1:** On the Land Use Map and through the development review process, concentrate development into previously developed or urban areas to promote infill development and prevent sprawl and habitat loss, to the extent feasible.

- **Policy CO-3.1.2:** Avoid designating or approving new development that will adversely impact wetlands, floodplains, threatened or endangered species and habitat, and water bodies supporting fish or recreational uses, and establish an adequate buffer area as deemed appropriate through site specific review.

- **Policy CO-3.1.3:** On previously undeveloped sites ("greenfields"), identify biological resources and incorporate habitat preservation measures into the site plan, where appropriate. (This policy will generally not apply to urban infill sites, except as otherwise determined by the reviewing agency).

- **Policy CO-3.1.4:** For new development on sites with degraded habitat, include habitat restoration measures as part of the project development plan, where appropriate.

- **Policy CO-3.1.5:** Promote the use of site-appropriate native or adapted plant materials, and prohibit use of invasive or noxious plant species in landscape designs.

- **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.

- **Policy CO-3.1.7:** Limit the use of turf-grass on development sites and promote the use of native or adapted plantings to promote biodiversity and natural habitat.

- **Policy CO-3.1.8:** On development sites, require tree planting to provide habitat and shade to reduce the heat island effect caused by pavement and buildings.

- **Policy CO-3.1.9:** During construction, ensure preservation of habitat and trees designated to be protected through use of fencing and other means as appropriate, so as to prevent damage by grading, soil compaction, pollution, erosion or other adverse construction impacts.

- **Policy CO-3.1.10:** To the extent feasible, encourage the use of open space to promote biodiversity.

- **Policy CO-3.1.11:** Promote use of pervious materials or porous concrete on sidewalks to allow for planted area infiltration, allow oxygen to reach tree roots (preventing sidewalk lift-up from roots seeking oxygen), and mitigate tree-sidewalk conflicts, in order to maintain a healthy mature urban forest.

Objective CO-3.2

Identify and protect areas which have exceptional biological resource value due to a specific type of vegetation, habitat, ecosystem, or location.

- **Policy CO-3.2.1:** Protect wetlands from development impacts, with the goal of achieving no net loss (or functional reduction) of jurisdictional wetlands within the planning area.

- **Policy CO-3.2.2:** Ensure that development is located and designed to protect oak and other significant indigenous woodlands. (Guiding Principle #9)

- **Policy CO-3.2.3:** Ensure protection of any endangered or threatened species or habitat, in conformance with State and federal laws.

- **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)

Objective CO-3.3

Protect significant wildlife corridors from encroachment by development that would hinder or obstruct wildlife movement.

- **Policy CO-3.3.1:** Protect the banks and adjacent riparian habitat along the Santa Clara River and its tributaries, to provide wildlife corridors.

- **Policy CO-3.3.2:** Cooperate with other responsible agencies to protect, enhance, and extend the Rim of the Valley trail system through Elsmere and Whitney Canyons, and other

areas as appropriate, to provide both recreational trails and wildlife corridors linking the Santa Susana and San Gabriel Mountains.

- **Policy CO-3.3.3:** Identify and protect one or more designated wildlife corridors linking the Los Padres and Angeles National Forests through the Santa Clarita Valley (the San Gabriel-Castaic connection).

- **Policy CO-3.3.4:** Support the maintenance of Santa Clarita Woodlands Park, a critical component of a cross-mountain range wildlife habitat corridor linking the Santa Monica Mountains to the Angeles and Los Padres National Forests.

- **Policy CO-3.3.5:** Encourage connection of natural open space areas in site design, to allow for wildlife movement.

Objective CO-3.4

Ensure that development in the Santa Clarita Valley does not adversely impact habitat within the adjacent National Forest lands.

- **Policy CO-3.4.1:** Coordinate with the United States Forest Service on discretionary development projects that may have impacts on the National Forest.

- **Policy CO-3.4.2:** Consider principles of forest management in land use decisions for projects adjacent to the National Forest, including limiting the use of invasive species, discouraging off-road vehicle use, maintaining fuel modification zones and fire access roads, and other measures as appropriate, in accordance with the goals set forth in the Angeles National Forest Land Management Plan.

- **Policy CO-3.4.3:** On the Land Use Map, maintain low density rural residential and open space uses adjacent to forest land, and protect the urban-forest interface area from overdevelopment.

- **Policy CO-3.4.4:** Participate as a stakeholder in planning efforts by the United States Forest Service for land uses within the National Forest, providing input as appropriate.

Objective CO-3.5

Maintain, enhance, and manage the urban forest throughout developed portions of the Santa Clarita Valley to provide habitat, reduce energy consumption, and create a more livable environment.

- **Policy CO-3.5.1:** Continue to plant and maintain trees on public lands and within the public right-of-way to provide shade and walkable streets, incorporating measures to ensure that roots have access to oxygen at tree maturity, such as use of porous concrete.

- **Policy CO-3.5.2:** Where appropriate, promote planting of trees that are native or climactically appropriate to the surrounding environment, emphasizing oaks, sycamores, maple, walnut, and other native species in order to enhance habitat, and discouraging the use of introduced species such as eucalyptus, pepper trees, and palms except as ornamental landscape features.

- **Policy CO-3.5.3:** Pursuant to the requirements of the Zoning Ordinance, protect heritage oak trees that, due to their size and condition, are deemed to have exceptional value to the community.

Objective CO-3.6

Minimize impacts of human activity and the built environment on natural plant and wildlife communities.

- **Policy CO-3.6.1:** Minimize light trespass, sky-glow, glare, and other adverse impacts on the nocturnal ecosystem by limiting exterior lighting to the level needed for safety and comfort; reduce unnecessary lighting for landscaping and architectural purposes, and encourage reduction of lighting levels during non-business nighttime hours.

- **Policy CO-3.6.2:** Reduce impervious surfaces and provide more natural vegetation to enhance microclimates and provide habitat. In implementing this policy, consider the following design concepts:

    - Consideration of reduced parking requirements, where supported by a parking study and/or through shared use of parking areas;
    - Increased use of vegetated areas around parking lot perimeters; such areas should be designed as bioswales or as otherwise determined appropriate to allow surface water infiltration;
    - Use of connected open space areas as drainage infiltration areas in lieu of curbed landscape islands, minimizing the separation of natural and landscaped areas into isolated “islands”; and

- Breaking up large expanses of paving with natural landscaped areas planted with shade trees to reduce the heat island effect, along with shrubs and groundcover to provide diverse vegetation for habitat.

- **Policy CO-3.6.3:** Restrict use of unauthorized off-road vehicles within sensitive habitat areas through signage, fencing, or other means as appropriate.

- **Policy CO-3.6.4:** Provide public information and support with demonstration sites at County facilities on gardening and landscaping techniques to reduce spread of invasive species and pollution from pesticides and fertilizers that threaten natural ecosystems.

- **Policy CO-3.6.5:** Ensure revegetation of graded areas and slopes adjacent to natural open space areas with native plants (consistent with fire prevention requirements).

Objective CO-3.7

Provide public access to, and education about, natural habitats and ecosystems.

- **Policy CO-3.7.1:** Support the public education programs offered at the Placerita Canyon Nature Center and Ed Davis Park (Sonia Thompson Nature Center).

- **Policy CO-3.7.2:** Seek opportunities for partnerships with schools, non-profit organizations, and volunteers, to increase public access to and information about natural areas.

Goal CO-4: Water Resources

An adequate supply of clean water to meet the needs of present and future residents and businesses, balanced with the needs of natural ecosystems.

Objective CO-4.1

Promote water conservation as a critical component of ensuring adequate water supply for Santa Clarita Valley residents and businesses.

- **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 turfgrass.

- **Policy CO-4.1.4:** Provide informational materials to applicants and contractors on the 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-4.1.9:** Support the development of additional facilities to store or bank stormwater, particularly on lands located outside the groundwater recharge areas that are depicted on Figure 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.

Objective CO-4.2

Work with water providers and other agencies to identify and implement programs to increase water supplies to meet the needs of future growth.

- **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-4.2.4:** Protect areas with substantial potential for groundwater recharge as depicted on Figure CO-10, and promote recharge of groundwater basins throughout the watershed (excluding the river bed) to assure water quality and quantity. The greatest consideration should be given to the Alluvial Aquifer and Saugus Aquifer groundwater recharge areas, followed by groundwater recharge areas for other groundwater basins that are designated by the State of California.

- **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-4.2.6:** Require that all new development proposals demonstrate a sufficient and sustainable water supply prior to approval.

- **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.

Objective CO-4.3

Limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, and managing stormwater runoff at the source.

- **Policy CO-4.3.1:** On undeveloped sites proposed for development, promote onsite stormwater infiltration through design techniques such as pervious paving, draining runoff into bioswales or properly designed landscaped areas, preservation of natural soils and vegetation, and limiting impervious surfaces.

- **Policy CO-4.3.2:** On previously developed sites proposed for major alteration, provide stormwater management improvements to restore natural infiltration, as required by the reviewing authority.

- **Policy CO-4.3.3:** Provide flexibility for design standards for street width, sidewalk width, parking, and other impervious surfaces when it can be shown that such reductions will not have negative impacts and will provide the benefits of stormwater retention, groundwater infiltration, reduction of heat islands, enhancement of habitat and biodiversity, saving of significant trees or planting of new trees, or other environmental benefit.

- **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-4.3.5:** Where detention and retention basins or ponds are required, seek methods to integrate these areas into the landscaping design of the site as amenity areas, such as a network of small ephemeral swales treated with attractive planting.

- **Policy CO-4.3.6:** Discourage the use of mounded turf and lawn areas which drain onto adjacent sidewalks and parking lots, replacing these areas with landscape designs that retain runoff and allow infiltration.

- **Policy CO-4.3.7:** Reduce the amount of pollutants entering the Santa Clara River and its tributaries by capturing and treating stormwater runoff at the source, to the extent possible.

- **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.

Objective CO-4.4

Promote measures to enhance water quality by addressing sources of water pollution.

- **Policy CO-4.4.1:** Cooperate with the Los Angeles County Sanitation District and Regional Water Quality Control Board as appropriate to achieve Total Maximum Daily Load (TMDL) standards for chlorides in the Santa Clara River.

- **Policy CO-4.4.2:** Support the cooperative efforts of property owners and appropriate agencies to eliminate perchlorate contamination on the Whittaker-Bermite property, and eliminate the use of any industrial chemicals or wastes in a manner that threatens groundwater quality.

- **Policy CO-4.4.3:** Discourage the use of chemical fertilizers, herbicides and pesticides in landscaping to reduce water pollution by substances hazardous to human health and natural ecosystems.

- **Policy CO-4.4.4:** Promote the extension of sanitary sewers for all urban uses and densities, to protect groundwater quality, where feasible.

Goal CO-5: Cultural and Historical Resources

Protection of historical and culturally significant resources that contribute to community identity and a sense of history.

Objective CO-5.1

Protect sites identified as having local, state, or national significance as a cultural or historical resource.

- **Policy CO-5.1.1:** For sites identified on the Cultural and Historical Resources Map (Figure CO-6), review appropriate documentation prior to issuance of any permits for grading, demolition, alteration, or new development, to avoid significant adverse impacts. Such documentation may include cultural resource reports, Environmental Impact Reports, or other information as determined to be adequate by the reviewing authority.

- **Policy CO-5.1.2:** Review any proposed alterations to cultural and historic sites identified in Table CO-1 or other sites which are so designated, based on the guidelines contained in the Secretary of the Interior's Standards for the Treatment of Properties (Title 36, Code of Federal Regulations, Chapter 1, Part 68, also known as 36 CFR 68), or other adopted County guidelines.

- **Policy CO-5.1.3:** As new information about other potentially significant historic and cultural sites becomes available, update the Cultural and Historical Resources Inventory and apply appropriate measures to all identified sites to protect their historical and cultural integrity.

Objective CO-5.2

Protect and enhance the historic character of Downtown Newhall.

- **Policy CO-5.2.1:** Support efforts by the City of Santa Clarita, in keeping with the Downtown Newhall Specific Plan policies, to ensure that the scale and character of new development is compatible with and does not detract from the context of historic buildings and block patterns.

- **Policy CO-5.2.2:** Support expansion and enhancement of a City of Santa Clarita historical park adjacent to the Pioneer Oil Refinery to illustrate historic oil operations in the Santa Clarita Valley.

- **Policy CO-5.2.3:** Support efforts by the City of Santa Clarita to ensure that all aspects of community design in Newhall, including street furniture, lighting, trash collection and storage areas, seating, and other accessory structures, are of a design and scale appropriate for the historic character of the district, while maintaining a sense of authenticity.

- **Policy CO-5.2.4:** Continue to support "Heritage Junction" and the historical museum within William S. Hart Park as historical resources that illustrate the various phases of settlement within the Santa Clarita Valley.

Objective CO-5.3

Encourage conservation and preservation of Native American cultural places, including prehistoric, archaeological, cultural, spiritual, and ceremonial sites on both public and private lands, throughout all stages of the planning and development process.

- **Policy CO-5.3.1:** For any proposed Area Plan Amendment, Specific Plan, or Specific Plan Amendment, notify and consult with any California Native American tribes on the contact list maintained by the California Native American

Heritage Commission that have traditional lands within the County's jurisdiction, regarding any potential impacts to Native American resources from the proposed action, pursuant to State guidelines.

- **Policy CO-5.3.2:** For any proposed development project that may have a potential impact on Native American cultural resources, provide notification to California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands within the County's jurisdiction, and consider the input received prior to a discretionary decision.

- **Policy CO-5.3.3:** Review and consider a cultural resources study for any new grading or development in areas identified as having a high potential for Native American resources, and incorporate recommendations into the project approval as appropriate to mitigate impacts to cultural resources.

Goal CO-6: Scenic Resources

Preservation of scenic features that keep the Santa Clarita Valley beautiful and enhance quality of life, community identity, and property values.

Objective CO-6.1

Protect the scenic character of local topographic features.

- **Policy CO-6.1.1:** Protect scenic canyons, as described in Part I of this element, from overdevelopment and environmental degradation.

- **Policy CO-6.1.2:** Preserve significant ridgelines, as shown on Figure CO-7, as a scenic backdrop throughout the community by maintaining natural grades and vegetation.

- **Policy CO-6.1.3:** Protect the scenic quality of unique geologic features throughout the planning area, such as Vasquez Rocks, by including these features within park and open space land where possible.

Objective CO-6.2

Protect the scenic character of view corridors.

- **Policy CO-6.2.1:** Where feasible, encourage development proposals to have varied building heights to maintain view corridor sight lines.

Objective CO-6.3

Protect the scenic character of major water bodies.

- **Policy CO-6.3.1:** Protect the shores of Castaic Lake to preserve its scenic quality from development.

- **Policy CO-6.3.2:** Protect the banks of the Santa Clara River and its major tributaries through open space designations and property acquisitions, where feasible, to protect and enhance the scenic character of the river valley.

Objective CO-6.4

Protect the scenic character of oak woodlands, coastal sage, and other habitats unique to the Santa Clarita Valley.

- **Policy CO-6.4.1:** Preserve scenic habitat areas within designated open space or parkland, wherever possible.

- **Policy CO-6.4.2:** Through the development review process, ensure that new development preserves scenic habitat areas to the extent feasible.

Objective CO-6.5

Maintain the scenic character of designated routes, gateways, and vista points along roadways.

- **Policy CO-6.5.1:** In approving new development projects, consider scenic views at major entry points to the Santa Clarita Valley, including gateways located at the Newhall Pass and along Lake Hughes Road, Route 126, Bouquet Canyon Road, Sierra Highway, State Route 14, and other locations as deemed appropriate by the reviewing authority.

- **Policy CO-6.5.2:** Establish scenic routes in appropriate locations as determined by the reviewing agency, and adopt guidelines for these routes to maintain their scenic character.

Objective CO-6.6

Limit adverse impacts by humans on the scenic environment.

- **Policy CO-6.6.1:** Enhance views of the night sky by reducing light pollution through use of light screens, downward directed lights, minimized reflective paving surfaces, and reduced lighting levels, as deemed appropriate by the reviewing authority.

- **Policy CO-6.6.2:** Improve views of the Santa Clarita Valley through various policies to minimize air pollution and smog, as contained throughout the Area Plan.

- **Policy CO-6.6.3:** Restrict establishment of billboards throughout the planning area, and continue abatement efforts to remove existing billboards that impact scenic views.

- **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 CO-6.6.5:** Encourage undergrounding of all new utility lines, and promote undergrounding of existing lines where feasible and practicable.

Goal CO-7: Air Quality

Clean air to protect human health and support healthy ecosystems.

Objective CO-7.1

Reduce air pollution from mobile sources.

- **Policy CO-7.1.1:** Through the mixed land use patterns and multi-modal circulation policies set forth in the Land Use and Circulation Elements, limit air pollution from transportation sources.

- **Policy CO-7.1.2:** Support the use of alternative fuel vehicles.

- **Policy CO-7.1.3:** Support alternative travel modes and new technologies, including infrastructure to support alternative fuel vehicles, as they become commercially available.

Objective CO-7.2

Apply guidelines to protect sensitive receptors from sources of air pollution as developed by the California Air Resources Board (CARB), where appropriate.

- **Policy CO-7.2.1:** Ensure adequate spacing of sensitive land uses from the following sources of air pollution: high traffic freeways and roads; distribution centers; truck stops; chrome plating facilities; dry cleaners using perchloroethylene; and large gas stations, as recommended by CARB.

Objective CO-7.3

Coordinate with other agencies to plan for and implement programs for improving air quality in the South Coast Air Basin.

- **Policy CO-7.3.1:** Coordinate with local, regional, state, and federal agencies to develop and implement regional air quality policies and programs.

Goal CO-8: Greenhouse Gas Reduction

Development designed to improve energy efficiency, reduce energy and natural resource consumption, and reduce emissions of greenhouse gases. (Guiding Principle #11)

Objective CO-8.1

Comply with the requirements of State law, including AB 32, SB 375, and implementing regulations, to reach targeted reductions of greenhouse gas (GHG) emissions.

- **Policy CO-8.1.1:** Create and adopt a Climate Action Plan (CAP) for all of the County's unincorporated areas within 18 months of the adoption date of the County's General Plan Update, which sets policy for all of the County's unincorporated areas, including those within the Santa Clarita Valley. The CAP shall be prepared and submitted for consideration and adoption by the Board of Supervisors as an amendment to the County's newly adopted General Plan to ensure that it receives public and agency input and environmental review pursuant to the California Environmental Quality Act (CEQA) prior to Board action. The CAP shall include the following components and criteria:

  - a. Plans and programs to reduce GHG emissions to levels that generally are consistent with specific targets for reduction of the County's current and projected 2020 GHG emissions inventory, and which are reasonably attributable to land uses within the County's unincorporated areas (including both existing and future development) and its internal government operations. Targets shall be generally consistent with reduction targets in Assembly Bill (AB) 32 (Health & Safety Code, §38500 et seq.), or other applicable local or regional enactments addressing GHG emissions, including applicable California Air Resources Board regulations adopted pursuant to AB 32.
    - (i) The CAP may establish goals beyond 2020, which are generally consistent with the applicable laws and regulations referenced in this policy and based on current science.
    - (ii) The CAP shall include specific and general tools and strategies to reduce the County's current and projected 2020 GHG inventory and to meet the CAP's target for GHG reductions by 2020.

- (iii) The CAP shall consider GHG reduction strategies, including but not limited to:
  - (a). Measures to improve energy efficiency in existing and future development;
  - (b). Increased use of renewable energy, including distributed systems for residential, commercial and industrial buildings, as well as utility-scale renewable energy generation and transmission facilities;
  - (c). Water conservation and efficiency measures for existing and future development, including water recycling;
  - (d). Solid waste measures, including reduction of waste generation, diversion of waste for reuse, recycling, methane capture, and potential waste to energy efforts;
  - (e). Land use, and transportation measures, including promotion of transit and transit-oriented development, alternatives to vehicle travel including pedestrian and bicycle infrastructure, alternative fuel vehicle infrastructure, and other measures; and
  - (f). Urban forestry or other means of improving carbon sequestration.

  The CAP will also consider the effect of federal, state, and regional actions to reduce GHG emissions within the County in addition to local actions that the County can take. The CAP shall establish a schedule of implementation actions.

  (iv). From to time, but at least every five years, the County shall review the CAP's land use and development reduction strategies for residential, municipal, and commercial buildings, and update the requirements to ensure that they help achieve the GHG reduction targets specified in the CAP.

- b. Mechanisms to ensure regular review of progress towards the emission reduction targets established by the CAP;

- c. Procedures for reporting on the progress of the CAP to officials and the public;

- d. Procedures for revising the CAP, as needed, to meet GHG emissions reduction targets, including environmental review of any revisions, pursuant to CEQA, as necessary; and

- e. Allocation of funding and staffing for CAP implementation.

- After adoption of the Climate Action Plan for all of the County's unincorporated areas, which will occur within 18 months of the adoption date of the County's General Plan Update, which sets policy for all of the County's unincorporated areas, including those within the Santa Clarita Valley, amend the Santa Clarita Valley Area Plan if necessary to ensure consistency with the adopted Climate Action Plan.

- **Policy C0-8.1.2:** Participate in the preparation of a regional Sustainable Communities Strategy (SCS) Plan to meet regional targets for greenhouse gas emission reductions, as required by SB 375.

- **Policy C0-8.1.3:** Implement the ordinances developed through the County's Green Building Program.

- **Policy C0-8.1.4:** Provide information and education to the public about energy conservation and local strategies to address climate change.

- **Policy C0-8.1.5:** Coordinate various activities within the community and appropriate agencies related to GHG emissions reduction activities.

Objective C0-8.2

Reduce energy and materials consumption and greenhouse gas emissions in public uses and facilities.

- **Policy C0-8.2.1:** 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 C0-8.2.2:** Ensure energy efficiency of existing public buildings through energy audits and repairs, and retrofit buildings with energy efficient heating and air conditioning systems and lighting fixtures.

- **Policy C0-8.2.3:** 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-8.2.4:** Establish maximum lighting levels for public facilities, and encourage reduction of lighting levels to the level needed for security purposes after business hours, in addition to use of downward-directed lighting and use of low-reflective paving surfaces.

- **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-8.2.7:** Support the use of sustainable alternative fuel vehicles for machinery and fleets, where practical, by evaluating fuel sources, manufacturing processes, maintenance costs and vehicle lifetime use.

- **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.

- **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-8.2.10:** Support installation of energy-efficient traffic control devices, street lights, and parking lot lights.

- **Policy CO-8.2.11:** Implement recycling in all public buildings, parks, and public facilities, including for special events.

- **Policy CO-8.2.12:** Provide ongoing training to appropriate County employees on sustainable planning, building, and engineering practices.

- **Policy CO-8.2.13:** Support trip reduction strategies for employees as described in the Circulation Element.

- **Policy CO-8.2.14:** Reduce extensive heat gain from paved surfaces through development standards wherever feasible.

Objective CO-8.3

Encourage green building and sustainable development practices on private development projects, to the extent reasonable and feasible.

- **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.

- **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 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.

- **Policy CO-8.3.7:** Encourage the use of trees and landscaping to reduce heating and cooling energy loads, through shading of buildings and parking lots.

- **Policy CO-8.3.8:** Encourage energy-conserving heating and cooling systems and appliances, and energy-efficiency in windows and insulation, in all new construction.

- **Policy CO-8.3.9:** Limit excessive lighting levels, and encourage a reduction of lighting when businesses are closed to a level required for security.

- **Policy CO-8.3.10:** Provide incentives and technical assistance for installation of energy-efficient improvements in existing and new buildings.

- **Policy CO-8.3.11:** Consider allowing carbon off-sets for large development projects, if appropriate, which may include funding off-site projects or purchase of credits for other forms of mitigation, provided that any such mitigation shall be measurable and enforceable.

- **Policy CO-8.3.12:** Reduce extensive heat gain from paved surfaces through development standards wherever feasible.

Objective CO-8.4

Reduce energy consumption for processing raw materials by promoting recycling and materials recovery by all residents and businesses throughout the community.

- **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.

Goal CO-9: Park, Recreation, and Trail Facilities

Equitable distribution of park, recreational, and trail facilities to serve all areas and demographic needs of existing and future residents.

Objective CO-9.1

Develop new parklands throughout the Santa Clarita Valley, with priority given to locations that are not now adequately served, and encompassing a diversity of park types and functions (including passive and active areas) in consideration of the recreational needs of residents to be served by each park, based on the following guidelines: (Guiding Principle #36)

- **Policy CO-9.1.1:** Common park standards shall be developed and applied throughout the Santa Clarita Valley, consistent with community character objectives, with a goal of five acres of parkland per 1,000 population. (Guiding Principle #36.a.)

- **Policy CO-9.1.2:** A range of parkland types, sizes, and uses shall be provided to accommodate recreational and leisure activities. (Guiding Principle #36.b)

- **Policy CO-9.1.3:** Provide local and community parks within a reasonable distance of residential neighborhoods.

- **Policy CO-9.1.4:** Explore and implement opportunities to share facilities with school districts, utility easements, flood control facilities, and other land uses, where feasible.

- **Policy CO-9.1.5:** Promote development of more playfields for youth and adult sports activities, in conjunction with tournament facilities, where needed.

- **Policy CO-9.1.6:** Continue to upgrade and expand existing facilities to enhance service to residents, including extension of hours through lighted facilities, where appropriate.

- **Policy CO-9.1.7:** Establish appropriate segments of the Santa Clara River as a recreational focal point, encouraging a beneficial mix of passive and active recreational uses with natural ecosystems by providing buffers for sensitive habitat.

- **Policy CO-9.1.8:** Make available easily accessible park and recreation facilities throughout the Santa Clarita Valley.

- **Policy CO-9.1.9:** Ensure that new development projects provide a fair share towards park and recreational facilities, phased to meet needs of residents as dwelling units become occupied, pursuant to the Quimby Act (California Government Code Section 66477) and local ordinances as applicable.

- **Policy CO-9.1.10:** Where appropriate, use flexible planning and zoning tools to obtain adequate park and open space land, including but not limited to specific plans, development agreements, density-controlled development (clustering) in accordance with the provisions of the Zoning Ordinance and subject to the limitations in Policy CO-10.2.5, and transfer of development rights.

- **Policy CO-9.1.11:** Locate and design parks to address potential adverse impacts on adjacent development from noise, lights, flying balls, traffic, special events, and other operational activities and uses.

- **Policy CO-9.1.12:** Establish minimum design standards for both public and private parks to provide for public safety and welfare through lighting, access, crime prevention through design, equipment, visibility, and other aspects of design.

- **Policy CO-9.1.13:** Provide passive areas for natural habitat, meditation, bird-watching, and similar activities in parks, where feasible and appropriate, including meditation gardens, wildflower and butterfly gardens, botanic gardens, and similar features.

- **Policy CO-9.1.14:** Ensure adequate park maintenance, and encourage programs for volunteers to assist in maintaining local parks, where feasible and appropriate.

- **Policy CO-9.1.15:** Provide a wide variety of recreational programs geared to all ages and abilities, including passive, active, educational, and cultural programs.

Objective CO-9.2

Recognize that trails are an important recreational asset that, when integrated with transportation systems, contribute to mobility throughout the Santa Clarita Valley. (Guiding Principle #34)

- **Policy CO-9.2.1:** Plan for a continuous and unified multi-use (equestrian, bicycling, and pedestrian/hiking) trail network for a variety of users, to be developed with common standards, in order to unify Santa Clarita Valley communities and connect with City, Regional, State, and Federal trails such as the dual-use (equestrian and hiking) Pacific Crest Trail.

- **Policy CO-9.2.2:** Provide trail connections between paseos, bike routes, schools, parks, community services, streets and neighborhoods.

- **Policy CO-9.2.3:** Use the Santa Clara River as a major recreational focal point for development of an integrated system of bikeways and trails, while protecting sensitive ecological areas.

- **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-9.2.6:** Provide trails to scenic vistas and viewpoints.

- **Policy CO-9.2.7:** Explore joint use opportunities to combine trail systems with utility easements, flood control facilities, open spaces, or other uses, where feasible.

- **Policy CO-9.2.8:** Ensure that trails are designed to protect habitat, ecosystems, and water quality.

- **Policy CO-9.2.9:** Pursue funding for trail maintenance and encourage volunteer participation in trail maintenance programs, where appropriate.

Goal CO-10: Open Space

Preservation of open space to meet the community's multiple objectives for resource preservation.

Objective CO-10.1

Identify areas throughout the Santa Clarita Valley which should be preserved as open space in order to conserve significant resources for long-term community benefit.

- **Policy CO-10.1.1:** Provide and protect a natural greenbelt buffer area surrounding the entire Santa Clarita Valley, which includes the Angeles National Forest, Santa Susana, San Gabriel, and Sierra Pelona Mountains, as a regional recreational, ecological, and aesthetic resource. (Guiding Principle #5)

- **Policy CO-10.1.2:** The Santa Clara River corridor and its major tributaries shall be preserved as open space to accommodate storm water flows and protect critical plant and animal species, as follows: (Guiding Principle #6)
    - Uses and improvements within the corridor shall be limited to those that benefit the community's use of the river in its natural state.
    - Development on properties adjacent to, but outside of the defined primary river corridor shall be:
    - Located and designed to protect the river's water quality, plants, and animal habitats by controlling the type and density of uses, drainage runoff (water treatment) and other relevant elements; and
    - Designed to maximize the full range of river amenities, including views and recreational access, while minimizing adverse impacts to the river.

- **Policy CO-10.1.3:** Through dedications and acquisitions, obtain open space needed to preserve and protect wildlife corridors and habitat, which may include land within SEA's, wetlands, woodlands, water bodies, and areas with threatened or endangered flora and fauna.

- **Policy CO-10.1.4:** Maintain and acquire, where appropriate, open space to preserve cultural and historical resources.

- **Policy CO-10.1.5:** Maintain open space corridors along canyons and ridgelines as a way of delineating and defining communities and neighborhoods, providing residents with access to natural areas, and preserving scenic beauty.

- **Policy CO-10.1.6:** Delineate open space uses within hazardous areas to protect public health and safety, which may include areas subject to seismic rupture, flooding, wildfires, or unsafe levels of noise or air pollution.

- **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.

- **Policy CO-10.1.8:** Encourage the use of vacant lots as community gardens, where appropriate.

- **Policy CO-10.1.9:** Preserve forested areas, agricultural lands, wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas, and other open space that provides natural carbon sequestration benefits.

- **Policy CO-10.1.10:** Support efforts by the City of Santa Clarita to ensure that the open space acquisition plan developed pursuant to the 2007 Open Space District formation conforms to the goals and objectives of the City's General Plan.

- **Policy CO-10.1.11:** Partner with conservation agencies and other entities to acquire and maintain open space, combining funding and other resources for joint-use projects, where appropriate.

- **Policy CO-10.1.12:** Identify, pursue, and ensure adequate funding sources to maintain open space areas.

- **Policy CO-10.1.13:** Provide reasonable accommodation to ensure that residents throughout the Santa Clarita Valley have equal access to open space areas, in consideration of the health benefits to residents from access to nature.

- **Policy CO-10.1.14:** Protect open space from human activity that may harm or degrade natural areas, including but not limited to off road motorized vehicles, vandalism, campfires, overuse, pets, noise, excessive lighting, dumping, or other similar activities.

- **Policy CO-10.1.15:** In conformance with State law, ensure that any action by which open space land is acquired or disposed of, restricted, or regulated, be consistent with the open space plan contained in this Element.

- **Policy CO-10.1.16:** In conformance with State law, ensure that all development is consistent with the open space plan contained in this Element.

- **Policy CO-10.1.17:** Allow alternative energy projects in areas designated for open space, where consistent with other uses and values.

Objective CO-10.2

Ensure the inclusion of adequate open space within development projects.

- **Policy CO-10.2.1:** Encourage provision of vegetated open space on a development project's site, which may include shallow wetlands and ponds, drought tolerant landscaping, and pedestrian hardscape that includes vegetated areas.

- **Policy CO-10.2.2:** Encourage that open space provided within development projects be usable and accessible, rather than configured in unusable strips and left-over remnants,

and that open space areas are designed to connect to each other and to adjacent open spaces, to the extent reasonable and practical.

- **Policy CO-10.2.3:** Where feasible, integrate open space areas with neighboring uses and parcels, to create shared amenities and green spaces.

- **Policy CO-10.2.4:** Seek opportunities to incorporate site features into the open space of a project design, which may include significant trees, vegetation, terrain, or water features, to provide thermal, acoustic, and aesthetic benefits.

- **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 a Community Standards District, where applicable.

XVI. IMPLEMENTATION OF THE CONSERVATION AND OPEN SPACE ELEMENT

The County of Los Angeles will implement the goals, objectives, and policies of the Conservation and Open Space Element of the Santa Clarita Valley Area Plan through the following actions:

Area Plan Monitoring and Coordination

- **Action 1.1:** : Periodically review the Area Plan to ensure consistency with changing conditions, needs and policies related to resource conservation and open space, and process amendments as deemed appropriate.

- **Action 1.2:** Coordinate with the City of Santa Clarita on any pending Area Plan Amendment that may affect the open space and conservation goals of this Element.

- **Action 1.3:** In considering any future proposals to amend the Land Use Map, consider open space needs as a major priority in planning for the Santa Clarita Valley.

- **Action 1.4:** In decisions regarding acquisition or disposal of real property, ensure consistency with the open space and conservation goals of this Element.

- **Action 1.5:** Require that master plans and improvements for streets and highways, drainage and flood control facilities, sewer and water systems, and other infrastructure are consistent with the goals and policies of this Element.

Zoning Ordinance Updates

- **Action 2.1:** Revise the County Zoning Ordinance and Map, including Community Standards Districts, as deemed necessary to ensure consistency with the goals and policies of this Element.

- **Action 2.2:** Implement policies and guidelines for hillside development and ridgeline protection within the Santa Clarita Valley that are compatible with City of Santa Clarita policies and guidelines.

Measures to Address Global Warming

- **Action 3.1:** Include the Santa Clarita Valley Area Plan as part of the Countywide Climate Action Plan to address the requirements of AB 32.

- **Action 3.2:** Participate in the preparation of a regional Sustainable Communities Strategy (SCS) to meet regional targets for greenhouse gas emission reductions, as required by SB 375.

Development Review Process

- **Action 4.1:** Through the development and environmental review process, ensure that proposed development projects and subdivisions are consistent with the maps, goals, and policies of this Element, including but not limited to energy and water conservation, low impact development techniques for handling stormwater, protection of night skies, trees and habitat, clustering development to protect open space, and preservation of resources.

- **Action 4.2:** Coordinate review of major development projects, such as Specific Plans, that may have regional impacts, with the City of Santa Clarita in order to ensure consistency of such projects with the maps, goals, and policies of this Element.

Water Conservation

- **Action 5.1:** Evaluate County-owned facilities for water use and conservation opportunities, and program funding for improvements annually in the Capital Improvement Program to retrofit landscaping and fixtures as needed to reduce consumption.

- **Action 5.2:** For all new landscaping within the public right-of-way, use drought tolerant landscape techniques, including hardscape, plant material and smart irrigation systems.

- **Action 5.3:** Establish a program to convert existing turf within the public right of way to drought tolerant landscaping within a specified time period, and allocate funds annually to implement the program.

- **Action 5.4:** For all existing and new County-owned buildings, grounds, and facilities that are not used for recreational purposes, limit the amount of site area planted with turf, and landscape these open areas using xeriscape techniques.

- **Action 5.5:** For County-owned parks, sports fields, and recreational facilities, evaluate the feasibility of converting turf grass to artificial turf.

- **Action 5.6:** In County-owned buildings and facilities, evaluate the feasibility of installing automatic faucets and waterless urinals.

- **Action 5.7:** Through the Sanitation Districts, expand the amount of recycled water available to various users.

- **Action 5.8:** Create opportunities to use reclaimed water for landscaping on County-owned facilities.

- **Action 5.9:** Provide information to the public on suitable plants and landscape techniques for water conservation, through making such information available to homeowners and development applicants.

- **Action 5.10:** Require drought tolerant, non-invasive landscaping on new development that incorporates native plants, pursuant to the County Zoning Ordinance.

Biological Resource Conservation

- **Action 6.1:** Implement the development guidelines of adopted Significant Ecological Areas (SEA), and update SEA boundaries as needed to reflect biological resource conditions, policies, and requirements.

- **Action 6.2:** Encourage and facilitate mitigation land banking in Significant Ecological Areas for resource protection.

- **Action 6.3:** Protect the interface between U. S. Forest Service land and adjacent County territory from encroachment by incompatible uses and/or hazards, through maintaining low densities on the Land Use Map and conducting code enforcement.

- **Action 6.4:** Continue preserving significant oak trees and woodlands through enforcement of the County Zoning Ordinance.

- **Action 6.5:** Require tree planting as a condition of approval on new development projects.

- **Action 6.6:** Continue maintaining designated areas as nature preserves, including Vasquez Rocks, Placerita Canyon, and Castaic Lake Recreation area.

Waste Reduction

- **Action 7.1:** Encourage recycling of construction and demolition debris.

- **Action 7.2:** Encourage recycling receptacles in all multi-family and non-residential development.

- **Action 7.3:** Implement recycling programs in all County facilities.

Parks, Recreation, Trails, and Open Space

- **Action 8.1:** Include the Santa Clarita Valley in the County-wide Parks Master Plan.
- **Action 8.2:** Seek opportunities to partner with other agencies on open space acquisition and maintenance.
- **Action 8.3:** Require open space and trail dedication from developers as a condition of project approval, where appropriate.
- **Action 8.4:** Continue to maintain County and State-owned park and open space lands.
- **Action 8.5:** In cooperation with the City of Santa Clarita, work towards establishing a common standard for open space throughout the Santa Clarita Valley.
- **Action 8.6:** Continue providing recreational programs that meet the needs of all economic and demographic segments of the population, and expand these programs as needed to serve additional residents.
- **Action 8.7:** Continue to maintain and expand the recreational trail system in County areas.

Historic Preservation

- **Action 9.1:** Coordinate with the Native American Heritage Commission on any land use or planning decisions that may affect Native American cultural resources.
- **Action 9.2:** Coordinate with the Santa Clarita Historical Society on any land use or planning decisions that may affect historical sites.
- **Action 9.3:** Continue to maintain historical sites and resources at the William S. Hart Park and the Harry Carey historical site.

Regulatory Compliance

- **Action 10.1:** For all new development projects, implement the procedures and requirements of the California Environmental Quality Act.
- **Action 10.2:** Implement the procedures and requirements of the State Mining and Reclamation Act for any active or proposed aggregate mining operations in the Santa Clarita Valley.
- **Action 10.3:** Implement procedures and requirements of the National Pollutant Discharge Elimination System (NPDES) on County projects, and through enforcement of compliance on private construction projects.
- **Action 10.4:** Require compliance with the requirements of the U. S. Fish and Wildlife Service and the California Department of Fish and Game regarding protection of biological species and habitats.
- **Action 10.5:** Ensure compliance with State waste diversion mandates.