Draft

Chiquita Canyon Landfill
Master Plan Revision
Draft Environmental Impact Report

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Lead Agency:

County of Los Angeles
Department of Regional Planning
320 West Temple Street, Room 1348
Los Angeles, CA 90012-3225

Project Proponent:

Waste Connections, Inc.
Chiquita Canyon Landfill
29201 Henry Mayo Drive
Valencia, CA 91355

Submittal: July 10, 2014

Prepared by:

CH2MHILL®

6 Hutton Centre Drive, Suite 700
Santa Ana, CA 92707

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Acronyms and Abbreviations

±	plus or minus
°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	microgram(s) per liter
$\mu g/m^3$	microgram(s) per cubic meter
$\mu N/m^2$	micro Newtons per square meter
µPa	micro Pascal
1,1-DCA	1,1-dichloroethane
2011 Annual Report	*County of Los Angeles Countywide Integrated Waste Management Plan Annual Report*
3-D	three-dimensional
AB 939	California Integrated Waste Management Act of 1989
AB	Assembly Bill
AD	anaerobic digestion
ADAM	Aerometric Data Analysis and Management
ADC	alternative daily cover
afy	acre-feet per year
Ameresco	Ameresco Chiquita Energy LLC
ANSI	American National Standards Institute
AQMP	Air Quality Management Plan
ARA	Access Road Alternative
ARI	Alternative Resources, Inc.
BACT	best achievable control technology
Basin Plan	*Water Quality Control Plan, Los Angeles Region*
BFE	Base Flood Elevation
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practice
BOD	biological oxygen demand
C&D	construction and demolition
CAA	California Clean Air Act
CAAQS	California Ambient Air Quality Standards
$CaCO_3$	bicarbonate
CACSD	Castaic Area Community Standards District
CalEPA	California Environmental Protection Agency
CalRecyle	California Department of Resources Recycling and Recovery

Caltrans	California Department of Transportation
CAP	Corrective Action Program
CARB	California Air Resources Board
CAT	California Environmental Protection Agency – Climate Action Team
CCCC	California Climate Change Center
CCL	Chiquita Canyon Landfill
CCR	*California Code of Regulations*
CD	compact disc
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CDP	Census Designated Place
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC 12	dichlorodiluoromethane
CFR	*Code of Federal Regulations*
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CIWMB	California Integrated Waste Management Board
CIWMP	Countywide Integrated Waste Management Plan
CLARTS	Central Los Angeles Recycling Center and Transfer Station
CLWA	Castaic Lake Water Agency
cm	centimeter(s)
cm/sec	centimeters per second
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COC	constituent of concern
COD	chemical oxygen demand
CQA	construction quality assurance
CRHR	California Register of Historical Resources
CSD	County Sanitation District
CSE	Countywide Siting Element

CUP	conditional use permit
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships System
dB	decibels
dBA	A-weighted decibels
DEIR	Draft Environmental Impact Report
DMP	Detection Monitoring Program
DO	dissolved oxygen
DPF	diesel particulate filter(s)
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DPW	Department of Public Works
DSOD	Division of Safety of Dams
DWR	Department of Water Resources
EFS	Engineering Feasibility Study
EIR	Environmental Impact Report
EMP	Evaluation Monitoring Program
EO	Executive Order
EPA	United States Environmental Protection Agency
ETA	Ecological Transition Area
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	United States Department of Transportation Federal Highway Administration
FR	*Federal Register*
ft	feet; foot
GCC	global climate change
GCCS	(landfill) gas collection and control system
GCL	geosynthetic clay liner
General Permit	Municipal Stormwater General Construction Permit
GHG	greenhouse gas
Golder	Golder Associates Inc.
GPS	global positioning system
GWP	global warming potential
HARP	Hotspots Analysis and Reporting Program
HCFC	hydrochlorofluorocarbon
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan

HDPE	high-density polyethylene
HEA	horizontal equivalent acceleration
HFC	hydrofluorocarbon
HHW	Household Hazardous Waste
HHWF	Household Hazardous Waste Facility
HIA	acute hazard index
HIC	chronic hazard index
HLA	Harding Lawson Associates
HM	Hillside Management
HOV	higher operating value
HRA	health risk assessment
I-5	Interstate 5
ICU	Intersection Capacity Utilization
IEC	International Electrotechnical Commission
IPCC	United Nations Intergovernmental Panel on Climate Change
IS	Initial Study
IWMA	Integrated Waste Management Act
JTD	joint technical document
kHz	kilohertz
km	kilometer
KOP	key observation point
L_{50}	50 percent exceeded sound level
LACDPW	Los Angeles County Department of Public Works
LACSD	Los Angeles County Sanitation District
LADPW	Los Angeles Department of Public Works
LADRP	Los Angeles County Department of Regional Planning
lbs/day	pounds per day
LCRS	leachate collection and removal system
LD	Larson Davis
L_{dn}	day-night sound level
LEA	local enforcement agency
L_{eq}	equivalent sound level
LFG	landfill gas
LFGTE	landfill gas-to-energy
L_{max}	maximum sound level
L_{min}	minimum sound level
LORS	laws, ordinances, regulations and standards

LOS	level of service
LST	Localized Significance Threshold
LULC	land use/land classification
m	meter
MBTA	Migratory Bird Treaty Act
MCE	maximum credible earthquake
MDL	method detection limit
MEI	maximally exposed individual
MEIR	residential maximally exposed individual
MEIW	worker maximally exposed individual
mg/L	milligrams per liter
mm	millimeter(s)
mm/yr	millimeters per year
MMT	million metric tons
MOA	Memorandum of Agreement
MPE	maximum probable earthquake
mph	miles per hour
MPR	Master Plan Revision
MRC	Mine Reclamation Corporation
MRF	Material Recovery Facility
MRP	Monitoring and Reporting Program
msl	mean sea level
MSR	multi-shear residual
MSW	municipal solid waste
$MTCO_2e/yr$	metric tons of CO_2e per year
MW	megawatt
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NED	National Elevation Dataset
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFIP	National Flood Insurance Program
NLF	Newhall Land and Farming Company
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide

NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NRMP	Natural River Management Plan
NSPS	Standards of Performance for New Stationary Sources
NSR	New Source Review
O&M	operations and maintenance
O_2	oxygen
OEHHA	Office of Environmental Health Hazard Assessment
OHWM	Ordinary High Water Mark
OPR	Office of Planning and Research
ORP	oxidation reduction potential
PCE	passenger car equivalent; tetrachloroethene
PFC	perfluorocarbon
PGA	peak ground acceleration
pH	hydrogen ion concentration
PHF	peak-hour factor
PHL	Puente Hills Landfill
PM_{10}	particulate matter with aerodynamic diameter less than or equal to 10 microns
$PM_{2.5}$	particulate matter with aerodynamic diameter less than or equal to 2.5 microns
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
POC	point of compliance
POE	probability of exceedance
POTW	publicly owned treatment works
ppm	parts per million
PQL	practical quantification limit
PRC	*California Public Resources Code*
Proposed Project	Chiquita Canyon Landfill Master Plan Revision
PSD	Prevention of Significant Deterioration
PTE	potential to emit
QTA	qualitative trend analysis
RCPG	Regional Comprehensive Plan and Guide
REL	reference exposure levels
RFEI	Requests for Expressions of Interest

RGL	Regulatory Guidance Letter
ROG	reactive organic gas(es)
ROWD	report of waste discharge
RPS	Renewable Portfolio Standard
RTF&A	R.T. Frankian & Associates
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCEDC	Southern California Earthquake Data Center
SCOPE	Santa Clarita Organization for Planning and the Environment
SCREMP	Santa Clara River Enhancement and Management Plan
SCVHS	Santa Clarita Valley Historical Society
SEA	Significant Ecological Area
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SLC	State Lands Commission
SLR	single-lens reflex
SNA	Significant Natural Area
SO_2	sulfur dioxide
SOx	sulfur oxide
SPCC	Spill Prevention, Control, and Countermeasure
SPL	sound pressure level
SR-126	State Route 126
SRRE	Source Reduction and Recycling Element
SSR	single-shear residual
Subcommittee	Alternative Technology Advisory Subcommittee
SWANCC	Solid Waste Agency of Northern Cook County
SWFP	solid waste facilities permit
SWMP	Stormwater Monitoring Program
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

Task Force	Los Angeles County Integrated Management Task Force
TASW	treated auto shredder waste
TCE	trichloroethene
TDS	total dissolved solids
TI	traffic index
TIA	Transportation Impact Analysis
Title 27	Title 27 *California Code of Regulations*
TNW	traditional navigable waters
TOC	total organic carbon
tpd	tons per day
tpw	ton(s) per week
TS	transfer station
TSP	total suspended particulate
TSS	total suspended solids
USACE	United States Army Corps of Engineers
USC	*United States Code*
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
UWMP	Urban Water Management Plan
V/C	volume-to-capacity
VCWPD	Ventura County Watershed Protection District
VOC	volatile organic compound
VWC	Valencia Water Company
WBWG	Western Bat Working Group
WDR	waste discharge requirement

Executive Summary

ES.1 Introduction

The Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project) is a proposal by Waste Connections, Inc. to extend the waste footprint at the existing CCL facility located in the northwestern portion of unincorporated Los Angeles County. Implementation of the Proposed Project would require approval of a conditional use permit (CUP) by the County of Los Angeles.

This Draft Environmental Impact Report (DEIR) addresses the potential environmental impacts that are anticipated to result from implementation of the Proposed Project. The DEIR has been prepared in accordance with the California Environmental Quality Act (CEQA). The Los Angeles County Department of Regional Planning (LADRP) is the lead agency for the CEQA process and has independently evaluated, directed, and supervised the preparation of this document.

The Executive Summary identifies the purpose of the DEIR, provides an overview of the Proposed Project and alternatives, summarizes the major findings and conclusions of the DEIR, identifies the potential impacts of the Proposed Project, and summarizes the recommended mitigation measures.

ES.2 Purpose of this Document

An environmental impact report (EIR) is a public informational document used for planning and decision-making purposes. The Los Angeles County Planning Commission and Board of Supervisors will consider the information in the EIR, including the public comments and staff response to those comments, during the public hearing process. As a legislative act, the final decision is made by the Board of Supervisors, who may approve, conditionally approve, or deny the project. The purpose of an EIR is to identify:

- Significant potential impacts of the proposed project on the environment and indicate the manner in which those significant impacts can be avoided or mitigated
- Any unavoidable adverse impacts that cannot be mitigated
- Reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level

An EIR also discloses growth-inducing impacts; impacts found not to be significant; and significant cumulative impacts of past, present, and reasonably anticipated future projects. CEQA requires an EIR be prepared that reflects the independent judgment of the lead agency regarding the impacts, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to reduce the impacts. A DEIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a DEIR include sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting counterproposals. Reviewers of a DEIR are requested to focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated.

This DEIR is being distributed directly to agencies, organizations, and interested groups and persons for comment during a 45-day formal review period in accordance with Section 15087 of the state *CEQA Guidelines*. The EIR process, including means by which members of the public can comment on the EIR, is discussed further in Chapter 1.0, Introduction.

ES.3 Overview of Proposed Project

CCL is an existing Class III (municipal solid waste) facility located near the City of Santa Clarita, just west of the Interstate 5 (I-5) and State Route 126 (SR-126) interchange (Figure ES-1). The site is a total of 639 acres, with an existing permitted waste footprint of approximately 257 acres, although not all of the 257 acres has been developed.

The Proposed Project includes the following elements: development of a new entrance and support facilities; better utilization of the landfill's potential disposal capacity through a lateral extension of the existing waste footprint and increased maximum elevation; increased daily disposal limits; acceptance of all nonhazardous wastes permitted at a Class III solid waste disposal landfill; continued operation of the landfill; new design features; environmental monitoring; development of a Household Hazardous Waste Facility (HHWF); mixed organics composting operation; and set-aside of land for potential future conversion technology. In addition, the Proposed Project includes the relocation of a portion of Southern California Edison's (SCE) existing Saugus-Elizabeth Lake-Fillmore 66 kilovolt (kV) Subtransmission Line in order to accommodate landfill improvements. Each of these project elements is summarized below and described in detail in Chapter 2.0, Project Description.

ES.3.1 Entrance and Support Facilities

CCL is located on the north side of SR-126, a four-lane paved highway running east-west along the southern boundary of CCL. As part of the Proposed Project, the primary landfill entrance will be located at Wolcott Way, as shown in Figure ES-2. Vehicles traveling to the site will turn from SR-126 onto Wolcott Way, which is a signalized intersection, and then west into the new landfill entrance. The new entrance will include administration buildings, a scale house, scales, and parking. A combination of landscaped screening berm and screening wall along the perimeter of the entrance facilities will screen views from SR-126 and Wolcott Way.

In order to accommodate the Proposed Project, CCL has requested SCE to relocate an approximately 3,260-foot portion of the Saugus-Elizabeth Lake-Fillmore 66 kV line between the east side of Wolcott Way to a location approximately 880 feet west of the current CCL entrance. The 66 kV line will be relocated into a new easement to be provided by CCL.

ES.3.2 Lateral Extension of the Waste Footprint and Increased Maximum Elevation

The Proposed Project will increase the permitted waste footprint within the existing property line by approximately 143 acres by extending it slightly south toward the existing landfill entrance and to the north and east (Figure ES-2). The waste footprint will increase from the currently permitted acreage, approximately 257 acres, to approximately 400 acres. The Proposed Project also will increase the permitted height of the landfill by 133 feet to a maximum elevation of 1,573 feet.

ES.3.3 Disposal Rate and Volume

The Proposed Project will increase daily and weekly disposal tonnage. The permitted maximum daily disposal tonnage will increase from 6,000 to 12,000 tons. The permitted maximum weekly disposal tonnage will increase from 30,000 to 60,000 tons. Depending on actual disposal rates under the Proposed Project, the life of the landfill would be increased by 21 to 38 years. The actual site life and corresponding closure date is dependent on a number of factors, including the disposal rate actually achieved over time.

N

0 5 10
Miles

FIGURE ES-1
Regional Location Map
Chiquita Canyon Landfill
Master Plan Revision

Source: Thomas Guide, California Road Atlas, 22nd Edition, 2004.

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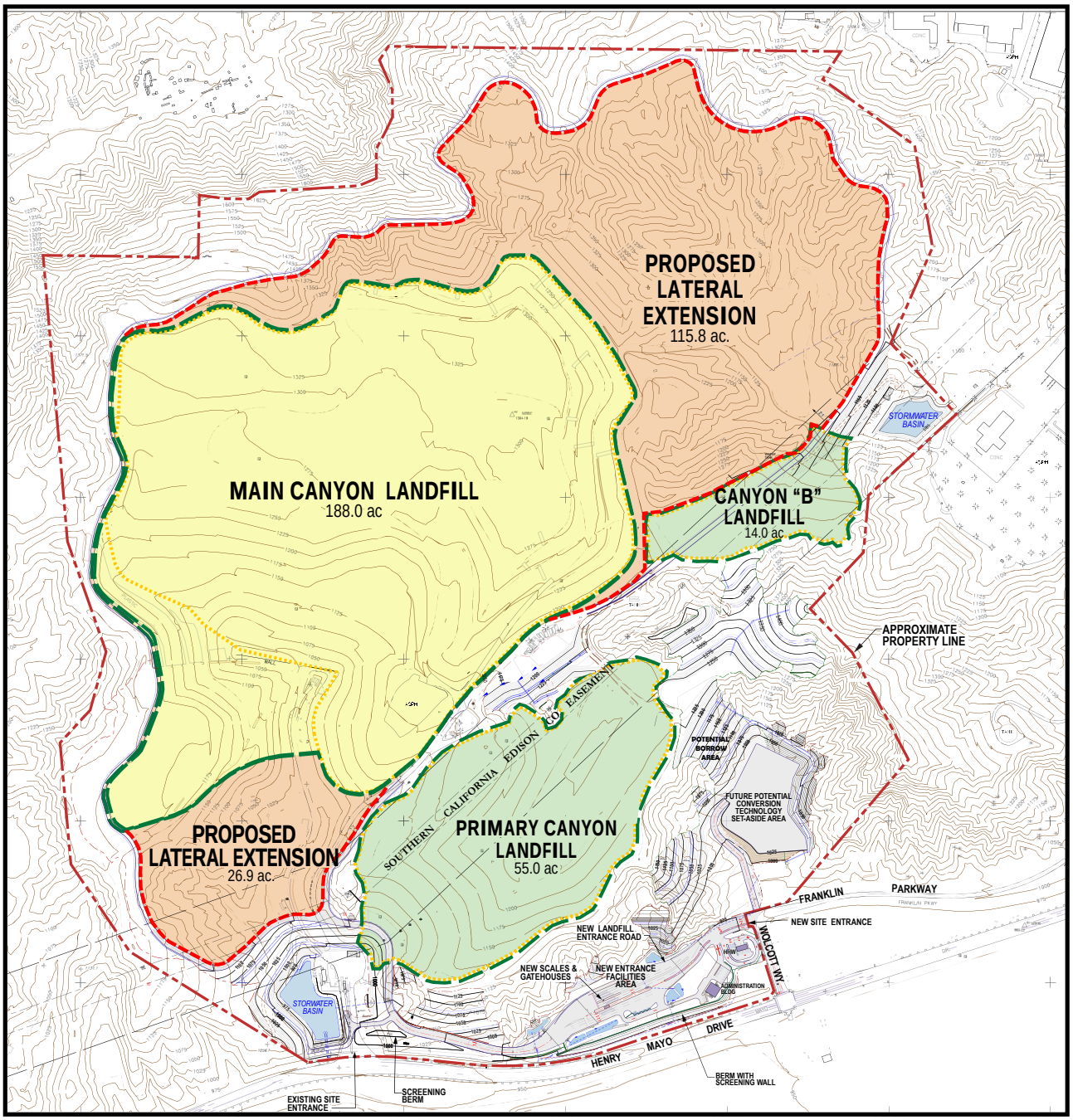
CH2MHILL



LEGEND

- LIMIT OF EXISTING LANDFILL (4/6/10)
- LIMIT OF PERMITTED LANDFILL
- PROPOSED PROJECT LIMIT OF EXTENSION
- CLOSED LANDFILL AREA
- PERMITTED LANDFILL AREA
- PROPOSED LATERAL EXTENSION

N

0 400 800
Feet

FIGURE ES-2
Existing and Proposed Landfill Footprint
Chiquita Canyon Landfill Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2014

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CH2MHILL

ES.4 Wastes to Be Received

The applicant proposes to accept for disposal all nonhazardous wastes acceptable at a Class III solid waste disposal landfill, in accordance with 27 CCR Section 20220, Waste Discharge Requirement (WDR) Order No. 98-086, and Solid Waste Facility Permit No. 19-AA-052.

ES.4.1 Materials to be Diverted from Waste Disposal

CCL is actively engaged in waste diversion activities; that is, diverting materials from waste disposal and putting them to beneficial reuse. This activity preserves CCL's disposal capacity for municipal solid waste to the maximum extent feasible. Diverted materials include shredded curbside green waste, clean soil, contaminated soil, treated auto shredded waste, tire shred, concrete, asphalt, concrete, and processed construction and demolition material. The type and volume of material diverted from waste disposal is highly variable on a daily basis.

ES.4.2 Landfill Construction

Construction for the Proposed Project includes development of the entrance and support facilities and landfill cell construction. Construction of the site entrance and associated support facilities would occur immediately upon project approval, and would take approximately 10 months to complete. Construction working hours would generally be daylight hours between 7:00 a.m. and 7:00 p.m., Monday through Saturday.

The landfill is developed in a series of cells. Construction of cells and associated environmental monitoring features would occur periodically over the life of the landfill. Generally, cell construction would occur every 18 months to 5 years over the life of the Project, for approximately 10 months each time. Construction working hours would generally be daylight hours between 7:00 a.m. and 7:00 p.m., Monday through Saturday.

ES.4.3 Landfill Operation

Hours of operation for the Proposed Project will be the same as the currently permitted operating hours, which are 24 hours per day, except from 5:00 p.m. Saturday through 4:00 a.m. Monday. Access to the landfill by both commercial and general public vehicles is allowed during all hours the landfill is operating. Landfill maintenance activities may occur 24 hours per day, 7 days per week. CCL also has the option to operate a maximum of four Sundays per year, if desired, for the quarterly Val Verde cleanup days. If CCL exercises the option of Sunday operation, the schedule of operation will be tailored to the specific need of the situation.

Full-time staff for the Proposed Project will increase by approximately 25, for a total of approximately 50, including additional administrative staff, maintenance personnel, equipment operators, scale house personnel, spotters, landfill gas (LFG) technicians, and laborers. Equipment at CCL for the Proposed Project will increase by 15 to 20 additional pieces. Anticipated additional equipment includes two motor graders, three bulldozers, three compactors, two scrapers, two water trucks, five trailer-mounted light plants, and one water wagon. Consistent with existing practices, at all times, CCL will provide sufficient types and numbers of equipment to properly operate in accordance with applicable permits, approvals, safety considerations, and industry standards.

CCL is prohibited from disposing hazardous waste, including household hazardous waste. To prevent hazardous waste from being disposed, CCL will continue to implement its existing load checking program as part of the Proposed Project. Established procedures at CCL are used to prevent hazardous waste entering the landfill. These procedures include posting of signs, education of existing and new customers, verbal and visual screening at the scale house, and daily random checks of incoming vehicles.

No change to disposal and cover procedures will occur as a result of the Proposed Project. Waste will continue to be delivered to CCL in transfer vehicles, collection trucks, and various other vehicles by commercial haulers and the general public. After being processed at the scale house, vehicles follow signs to the active disposal area. CCL will continue to be constructed by the area fill method, wherein waste is spread and compacted in

approximately 2-foot-thick layers on a working face of approximately 200 feet by 300 feet and sloped at 3:1 (horizontal:vertical) or flatter. The compaction equipment traverses the entire length of the working face, making three to five passes over each 2-foot-thick (minimum) layer of waste to obtain adequate compaction of all wastes. To prevent bridging of the surrounding waste, large or bulky wastes are separated and placed in the lower portion of the advancing lift, and thoroughly crushed by compaction equipment.

No changes to the water uses onsite or sewage disposal are proposed as a result of the Proposed Project. Sanitary facilities at the landfill office are connected to a permitted septic system, and portable toilets are used for other areas of the site. Unless a sewer line becomes available in the future, the Proposed Project will continue to rely on these facilities. A new septic system may be constructed to support the entrance facilities. Bottled drinking water will continue to be provided at the scale house, landfill office, and equipment maintenance facility for employees. Water for routine landfill operation, including dust control and irrigation, will continue to be supplied from an offsite irrigation well south of the landfill on Newhall Ranch. During periodic construction of new landfill disposal cells, additional construction water will be supplied via a separate water supply line from storage tanks located north of the landfill.

ES.4.4 Landfill Design Features

Design of the landfill is premised on prescriptive and performance standards set forth in state and federal regulatory requirements that establish environmental protection standards to prevent harm to the environment. Site excavation is divided into a series of excavation areas associated with fill modules. The excavation sequence is designed for efficient excavation and handling of soils, access, drainage, liner preparation, and controlled waste placement. No change to the landfill liner system is anticipated as a result of the Proposed Project, but the liner system remains subject to the requirements of (Regional Water Quality Control Board (RWQCB). The liner system is designed to contain liquid (leachate) that accumulates in the landfill and direct it to the leachate collection and removal system (LCRS).

Consistent with the existing landfill grading plan, the design of the landfill final grading plan is controlled by surrounding topography, existing limits of the waste fill, waste and soil consolidation and settlement considerations, slope stability requirements, minimum surface gradients required to adequately drain the completed fill, drainage requirements of stormwater drainage control facilities, aesthetics, and site end use considerations.

Final landfill slopes will be constructed no steeper than 3:1. An earthfill berm will be constructed at the south end of the Main Canyon area to serve as a buttress. The landfill is developed sequentially, considering the effects of landfill stability, allowing the final cover and drainage facilities to be completed as the fill progresses. The remaining Main Canyon area and the area to the south of the existing permitted landfill are proposed to be developed in three fill modules, Fill Modules 5, 6, and 7. The East Canyon and North Canyon are proposed to be developed in five fill modules, Fill Modules 8 through 12.

ES.4.5 Environmental Monitoring

The landfill environmental monitoring systems are a component of the overall landfill design and operating standards established by state and federal regulations and work in conjunction with the landfill design standards to provide a key assurance of early detection of any potential for impairment of groundwater or air quality.

The monitoring program for the Proposed Project will be similar to the existing program and will require approval by the RWQCB under the landfill facility WDRs. The monitoring program includes Water Quality Monitoring, Groundwater and Vadose Zone Monitoring. Leachate Monitoring, Surface Water Monitoring, Air and Landfill Gas Monitoring, and Nuisance and Health Hazard Monitoring (odor, fire control, dust control, vector control, litter, and noise).

ES.4.6 Household Hazardous Waste Facility

An HHWF will be constructed at CCL. While the facility will be located in the same area as the new landfill entrance and support facilities, the HHWF will be physically separate from the landfill and will have its own entrance and exit. The HHWF will be a joint effort between CCL and Los Angeles County. CCL will design and construct the HHWF; the County will permit and operate the facility.

The HHWF will be constructed and permitted to receive paint and solvents; used motor oil and filters, anti-freeze, and other automotive fluids; cleaning products; pool and garden chemicals; aerosol cans; all medicine except controlled substances; auto batteries; and household batteries. The HHWF would receive and store these materials in preparation for shipment to markets that would recycle the materials or shipment to a hazardous waste disposal site. Operating hours for the HHWF will be 24 hours per day, 7 days per week, for purposes of processing materials, operating equipment, and/or maintaining the facility. Delivery of material to the HHWF by members of the general public will be limited to 6:00 am to 8:00 pm, 7 days per week. However, actual operating hours for the HHWF would be set by the County, and are anticipated to be one or two weekend days per month. The HHWF will be staffed continuously during operation by an individual trained in hazardous materials management.

ES.4.7 Mixed Organics Composting Facility

The Proposed Project includes continued green waste processing and composting operations allowed under the current CUP. The processing and composting operation that was located at the landfill since 1997 suspended operations in 2009 as a result of the economic downturn. CCL intends to resume operation in some manner in the future, likely in late 2014 or early 2015. When it resumes operation, the facility is likely to be located on the landfill surface. As the landfill develops, the composting facility may be relocated periodically to accommodate landfill operations. The composting facility is permitted under the current CUP to receive up to 560 tons per day. Operating hours for the composting operation will be 24 hours per day, 7 days per week. Access by customers for purposes of removing finished mulch biomass fuel, and compost will be limited to 6:00 am to 8:00 pm, 7 days per week, although actual hours may vary within this window. In addition to shredded green waste from curb-side pick up or commercial landscape operations, the Proposed Project would also include pre- and post-consumer food waste as part of a “mixed organics” composting process.

ES.4.8 Land Set-Aside for Potential Future Conversion Technology Facility

CCL has included within the Project Description a set-aside of a portion of the site within the existing CCL property boundary that could be used for a potential future conversion facility. The location of the property set-aside is shown in Figure ES-2. The Proposed Project does not include design, permitting, construction or operation of a conversion facility.

ES.4.9 Landfill Closure and Post-Closure

Landfill closure will occur on an incremental basis as areas of the landfill reach final grade. Closure activities will be performed in a manner consistent with a final closure plan to be prepared for the site that requires the approval of RWQCB, the Local Enforcement Agency (LEA), and California Department of Resources Recycling and Recovery (CalRecycle). The final closure plan will include a description of the area to be closed, proposed final cover, environmental monitoring and control systems (i.e., groundwater, surface water, leachate, and LFG), structures to be removed, site security, final grading, drainage and erosion control, and revegetation.

In conjunction with the final closure plan, a final post-closure maintenance plan will be prepared. The final post-closure maintenance plan will be submitted to and approved by RWQCB, the LEA, and CalRecycle. The post-closure end use will be consistent with the surrounding terrain, land uses, and zoning. As part of a future closure plan for the landfill, CCL will propose that a park or other type of publicly accessible recreational use on the site be approved in accordance with applicable laws and the covenants, conditions, and restrictions for the landfill. If requested by the County or applicable governmental agency, CCL will offer to dedicate such park or

recreational area upon completion. CCL proposes to revegetate exposed slopes and landfill top areas with native plants and other appropriate screening landscape.

The landfill gas-to-energy (LFGTE) plant, LFG flares, and leachate storage/treatment/load-out facilities will continue operation for some period of time after the landfill is closed. Additionally, the HHWF and composting facility could continue operation after landfill closure.

ES.5 Project Alternatives

Section 15126(d) of the *CEQA Guidelines* requires an EIR to describe a range of reasonable alternatives to the Proposed Project, or to the location of the project, which could feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant environmental effects of the project.

To determine the alternatives suitable for a detailed discussion in this DEIR, the preparers evaluated a wide range of alternatives, including offsite facility alternatives and non-disposal alternatives. This broader range of alternatives was initially reviewed in light of the Proposed Project's objectives, to evaluate whether and to what extent the Proposed Project's objectives and needs could be met by potential alternatives, which might be available either technologically or at other site locations. A summary of the alternatives is provided below and discussed in detail in Chapter 18.0, Project Alternatives.

ES.5.1 Alternatives Considered But Not Evaluated in Detail

The Los Angeles County Department of Public Works (LACDPW) and the Los Angeles County Sanitation District have continued to pursue the development of out-of-county disposal through waste-by-rail systems as a partial source of long-term disposal capacity for the greater metropolitan Los Angeles area regional system (referred to as the Haul Transport to Out-of-County Landfills Alternative). Consideration was also given to an alternative that would limit the size of an expansion to provide a smaller amount of additional onsite capacity (referred to as the Alternative Landfill Project Design Alternative).

Based on the initial screening-level evaluation, it was determined that the Rail Haul Transport to Out-of-County Landfills Alternative and the Alternative Landfill Project Design Alternative could not feasibly attain the objectives of the Proposed Project. The Rail Haul Transport to Out-of-County Landfills Alternative would not meet most of the basic project objectives, because consideration of waste-by-rail to remote locations would not secure landfill capacity in proximity to population centers served by CCL prior to projected capacity shortfalls; would not expand CCL within its existing leasehold boundaries; and would not maximize the utilization of available airspace within the Chiquita Canyon site property holdings and realize the value of the property to its fullest potential. The applicant does not own or control a site served by a rail haul or intermodal capability. For all of the above reasons, remote/out-of-county rail haul landfills cannot reasonably be considered a feasible alternative to the Proposed Project and, therefore, rail haul transport to out-of-county landfills has been eliminated from further environmental evaluation in the review of this project.

It was also determined that there are no realistic onsite reduced project alternatives that could feasibly attain most or all of the project objectives, because they would not provide short-term, contingency, or long-term disposal tonnage options to the County; do not offer resource recovery and employment opportunities; would not avoid the significant effects of the expansion; and would not enhance local or regional infrastructure. Therefore the Alternative Landfill Project Design Alternative was also eliminated from further consideration.

ES.5.2 Evaluation of Project Alternatives

In accordance with Section 15126(d) of the *CEQA Guidelines*, the following three alternatives are presented in this DEIR:

A. No Project Alternative
B. Waste Reduction and Alternative Technologies
C. Alternative New Site in Northern Los Angeles County

ES.5.2.1 Alternative A: No Project Alternative

CEQA requires that an EIR consider the No Project Alternative. For this DEIR, the No Project Alternative is no approval of an expansion of the existing CCL, resulting in the cessation of waste receipts and consequent closure of the existing landfill operations. The current CUP closure date is 2019; however the facility is expected to reach its permit-based disposal limitation of 23 million tons established in the current CUP between 2015 and 2019. The No Project Alternative would require all existing waste destined for CCL to be redirected to other landfills in the region or otherwise disposed, diverted, or recycled. Under the No Project Alternative, the expansion project's unavoidable effect on landform alteration would be avoided, but impacts on regional air quality would remain. Impacts of waste disposal on air quality would occur at other locations within the same air basin. The nature of the impacts would depend upon the disposal alternative used. However, most of the basic project objectives would not be achieved under this No Project Alternative, such as expanding CCL with additional capacity and resource recovery operations; providing in-county daily disposal capacity and general long-term capacity; providing convenient access and competitive pricing to landfill users; supporting future infrastructure needs of the area; and maximizing the value of the operations.

ES.5.2.2 Alternative B: Waste Reduction and Alternative Technologies

The Waste Reduction and Alternative Technologies alternative describes and evaluates waste reduction techniques and alternative technologies that could potentially be applied to the solid waste management system in Los Angeles County, including source reduction, mechanical volume reduction, resource recovery, and conversion technologies. The alternative waste reduction technologies, including conversion technologies, are not in and of themselves considered feasible alternatives to the Proposed Project. That is, none of these techniques (alone or in combination) can completely offset the need for additional landfill capacity. The discussion of the obstacles and challenges to development of conversion technologies in Los Angeles County and elsewhere in the state demonstrates that the state of the technology is in its infancy and has yet to be demonstrated to be commercially feasible. LACDPW analysis of nine alternative scenarios in its assessment of landfill capacity in the *Countywide Integrated Waste Management Plan 2012 Annual Report* (LACDPW, 2013) demonstrates that even with an assumed optimistic and aggressive use of conversion technologies with increased diversion rates, expanded landfill capacity is necessary in Los Angeles County to avoid capacity shortfalls. These alternative waste reduction technologies are, however, capable of extending the operational capacity of landfills. LACDPW projections, based on waste generation knowledge, changes in population, and existing and planned development, indicate that waste disposal tonnage will increase by 56 percent by 2020. Alternative waste reduction technologies will be employed as required by Assembly Bill (AB) 939 and County policy; however, their implementation does not offset the ultimate need for the Proposed Project or the expansion of other landfill facilities.

ES.5.2.3 Alternative C: Alternative New Site in Northern Los Angeles County

This DEIR evaluates an alternative offsite location as potentially feasible, based on the Proposed Project's main objective to develop significant new disposal capacity within northern Los Angeles County.

The Proposed Project is the proposed expansion of an existing landfill on property owned by the applicant, a private entity, and the concept of a new landfill to be sited in an alternative location would not meet the most basic objectives of the Proposed Project; and is otherwise not feasible because the applicant has no means of eminent domain to acquire the lands of others for its project purposes. While eminent domain is not available to a private applicant, it is possible to acquire lands through customary commercial dealings.

For an alternative location for the Proposed Project to be considered feasible, the site would have to be suitable for landfill development, and meet the detailed siting and design criteria established in Title 27 *California Code of Regulations* (CCR). This criteria would preclude any property that would not meet the Title 27 landfill siting requirements. In general, the State of California siting regulations (which are based on the federal Subtitle D regulations) restrict landfills from locating in areas near runways, within 100-year floodplains, in unstable terrain, in wetlands, or in active fault zones. Site feasibility is further determined by the landfill

operator's ability to acquire, control, or otherwise have access to suitable properties. The applicant does not own or control properties in the vicinity of the Proposed Project location suitable for landfill development—the applicant does not own any other property in the general vicinity of the CCL facility.

A variety of requirements and permitting decisions are required to develop a solid waste disposal facility under California laws and regulations governing such facilities. Experience locally and throughout the state demonstrates that siting and permitting a solid waste landfill is a time consuming, expensive, proposition that can easily take between 10 to 12 years or more, without guarantee of a successful or even partially successful result.

ES.5.2.4 Comparison of Alternatives

None of the project alternatives would meet most of the Proposed Project objectives and avoid, or substantially lessen, the significant effects of the Proposed Project as required by Section 15126(d) of the *CEQA Guidelines*. It can be concluded that only the No Project Alternative would avoid the landform alteration effects of the Proposed Project. However, the No Project Alternative shifts daily operational impacts of landfilling operations to other sites, and recognizes that additional capacity has to be created in the system to handle the waste from CCL. In addition, the transportation impacts and associated greenhouse gas (GHG) impacts of transportation on one or more distant landfills have to be considered as significant impacts of the No Project Alternative. The No Project Alternative in effect defeats the important objectives of the Proposed Project, the development of substantial additional disposal capacity to serve the region's and Los Angeles County's needs.

The Waste Reduction and Alternative Technologies Alternative provides several worthwhile and important elements of source reduction and diversion to try to reduce the overall contribution to the waste stream, as well as providing alternative methods of disposal. While the concepts are valued, not all have been demonstrated to be feasible for a variety of reasons. In the context of Los Angeles County, which is projected to see an increase of 56 percent in landfill capacity demand in spite of aggressive recycling and source reduction programs, this alternative cannot be considered as a feasible means to eliminate the need for the Proposed Project. Despite Los Angeles County's aggressive approach to conversion technologies, the technology has not yet been proven to be economically or environmentally viable in California and, thus, it cannot be concluded that conversion along with other waste reduction and alternative technologies can be a viable alternative to the Proposed Project.

The development of a new landfill in the northern Los Angeles County area has several important steps, which must be undertaken, that even under the most favorable conditions as noted in Chapter 18.0 will take on the order of 12 years or longer. Thus, although an offsite new landfill alternative may appear to some to be an attractive alternative, the actual process of locating, identifying, and ultimately permitting such a project is a very expensive, time-consuming process that cannot be achieved within the critical timeframe necessary for development of additional landfill disposal capacity, the primary objective of the Proposed Project. As such, a new site in northern Los Angeles County is simply not a feasible alternative to the Proposed Project.

CEQA requires that this DEIR identify the "environmentally superior alternative from amongst the alternatives evaluated." Based on the discussion of the various alternatives, the environmentally superior alternative is the No Project Alternative. The State CEQA Guidelines Section 15126.6(e)(2) states, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Given this guidance, the environmentally superior alternative is Alternative B, Waste Reduction and Alternative Technologies Alternative.

ES.6 Major Findings and Conclusions

The following section summarizes the major findings and conclusions of the resource area analyses. Detailed information by resource is provided in Chapters 4.0 through 16.0 of this DEIR.

ES.6.1 Land Use

Landfill expansion activities associated with the Proposed Project are consistent with the existing land uses (i.e., waste disposal activities) that have occurred at CCL since its inception. Likewise, waste disposal activities would continue to occur within the existing site boundary, and would not disrupt or divide the physical arrangement of an existing community. Additionally, the Proposed Project is consistent with, or would not conflict with, any applicable local plan or policy including general plans, specific plans, the Los Angeles County Integrated Waste Management Plan (CIWMP), zoning ordinances, and habitat conservation plans. No significant impacts associated with land use are expected to occur as a result of the Proposed Project. Furthermore, the Proposed Project, when combined with reasonably foreseeable projects in the project vicinity, would not incrementally contribute to cumulative changes to land use, and no cumulative impacts would result.

Additionally, the proposed composting facility, HHWF, and potential future conversion facility would all be co-located with the landfill, and, therefore, future activities associated with the facilities are anticipated to be consistent with the existing land uses (i.e., waste disposal activities) that have occurred and will continue to occur at CCL. The proposed facilities would maintain the intended land uses of the site and would not conflict with applicable land use plans or adopted policies, and no impacts related to land use are anticipated from these facilities.

ES.6.2 Geology and Hydrogeology

There is a potential for the Proposed Project to have a significant geologic and hydrogeologic effect on the environment due to resulting changes in the physical conditions that exist in the area. However, as described, below, the impacts from the Proposed Project due to these changes will be less than significant with mitigation.

The Proposed Project would not expose people or structures to substantial geologic hazards from rupture of a known earthquake fault because there are no known active or Holocene faults within the Proposed Project area. There is a potential for the Proposed Project to expose people or structures to substantial geologic hazards from strong seismic ground shaking. However, the Proposed Project will be designed to meet or exceed the stringent seismic ground shaking regulatory construction standards, and implementation of the design will minimize this impact to a less-than-significant level.

There is a potential for seismically related ground failure and landslides for the North, East, and South Main Canyon areas. The results of the slope stability analyses indicate that all of the cut slopes are grossly stable and any unsuitable material identified during excavation by a geotechnical engineer will be overexcavated and replaced with compacted earthfill. Therefore, these impacts would not be significant.

Erosion will be controlled during implementation of the Proposed Project as required by the National Pollutant Discharge Elimination System (NPDES) General Permit requirements and the associated site-specific Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Monitoring Program (SWMP), as well as CCR Title 27 requirements. The potential soil loss was estimated to be less than 2 tons per acre per year, which is the maximum annual soil loss recommended by the United States Environmental Protection Agency (EPA). Therefore, these impacts would not be significant.

The potential for debris flows exists within the natural drainages and slopes along the north side of the future entrance road, specifically where the entrance road will cross in front of three significant drainage gullies and along the perimeter of the development of the Proposed Project area. The proposed design should allow for the cleanup. The potential impact would be mitigated to below a level of significance by allowing for the control of any debris flow (see Mitigation Measure GH-1). The Proposed Project design has taken into consideration

site-specific geologic investigations, and excavation slopes have been designed to avoid adverse bedding conditions. Any unsuitable material, as determined by a geotechnical engineer, present in the subgrade after excavation will be overexcavated and replaced with compacted earthfill. Therefore, the Proposed Project would not be located on a geologic unit or soil that is unstable or that could become unstable. Furthermore, as described above, the results of the slope stability analyses found that all of the cut slopes are grossly stable. Therefore, these impacts would not be significant.

There is a potential for buildings and/or other structures related to the Proposed Project to be located on expansive soil because the site is underlain by bedrock of the Pico and Saugus formations. This potential impact would be mitigated by performing additional testing of the expansive properties of the soils if buildings and/or other structures sensitive to expansive soils are planned for the site (see Mitigation Measure GH-2).

Potential exists for the Proposed Project to incrementally deplete groundwater supplies and interfere with groundwater recharge because the proposed liner and cover system of the Unit and erosion controls over the remaining developed areas would reduce or eliminate recharge of precipitation to the water table. There is also a potential that groundwater extraction may be required for a corrective action program if a release from the Unit occurs to the environment. However, the volume of decreased recharge or potential groundwater extraction related to the Proposed Project would not be measurable compared to the recharge that occurs from precipitation over the Santa Clara River Valley East Subbasin and runoff from the surrounding Santa Clara River Valley watershed. In addition, stormwater runoff discharged from the site would flow into the Santa Clara River, where it could recharge the groundwater system. Therefore, these impacts would not be substantial.

Finally, the Proposed Project, in conjunction with other related projects, would not produce cumulatively significant effects associated with geology and hydrogeology.

ES.6.3 Surface Water Drainage

There is a potential for the Proposed Project to substantially alter existing drainage patterns; substantially increase erosion of surface runoff and cause flooding; and create or contribute to runoff that exceeds drainage system capacity. The existing drainage patterns will be altered within CCL during implementation of the Proposed Project as a result of constructing, operating, and maintaining a precipitation drainage and control system. However, this system will be designed and constructed to carry the peak discharge resulting from the 100-year, 24-hour storm event, as required by Title 27, and the stormwater runoff volume resulting from the Capital Flood event (50-year, 24-hour storm), as required by LACDPW. In addition, the system will limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the required design storms. This drainage and control system will prevent substantial erosion of surface runoff and will not cause flooding. Drainage patterns will not be altered downstream of the discharge points from the CCL site. Therefore, no mitigation measures would be required, because all onsite drainage patterns will be altered in accordance with applicable regulatory requirements, and offsite drainages will not be altered.

There is no potential for the Proposed Project to place housing within a 100-year flood area and/or impede or redirect flood flows within a 100-year flood hazard area. The landfill site is above the 100-year floodplain of the Santa Clara River as identified by Federal Emergency Management Agency (FEMA). Stormwater at the landfill site is controlled by diversion berms, drainage channels, overside drains, and sedimentation basins. Exposed soil and interim and final covers are vegetated to control erosion. All surface drainage from the landfill property flows through one or more sedimentation pond before discharging from the site. These controls, together with the landfill site being located above the 100-year floodplain, ensure that the Proposed Project will not impede or redirect flood flows within a 100-year flood hazard area.

Because the drainage and control system will be constructed, operated, and maintained in accordance with regulatory criteria (NPDES, Title 27, and LACDPW), the potential for the Proposed Project to result in flooding, which could expose people or structures to risk of loss, injury, or death would not be significant.

There is no potential for the Proposed Project to contribute to inundation by tsunami or seiche. CCL is too far inland and high in elevation to be significantly threatened by tsunami, and there are no enclosed water bodies at or in the vicinity of CCL.

There is a potential for the Proposed Project to contribute to inundation by mudflow (similar terms are debris flow and mudslide). However, implementation of Mitigation Measure GH-1 would allow for the cleanup or control of any debris flows that may encroach into the landfill cell and perimeter maintenance road from the natural drainages and slopes that are not included in the proposed grading and construction of drainage/ debris basins. The potential to expose people to risk of injury or death from this debris flow would be mitigated by requiring operations staff to avoid the potential debris flow areas after an appropriate amount of waiting time following heavy and sustained precipitation events (see Mitigation Measure SW-1).

Finally, no significant cumulative surface water runoff/flooding impacts are expected from the Proposed Project because each project must demonstrate to the County that floodwaters will be accommodated by onsite drainage facilities.

ES.6.4 Water Quality

The Proposed Project has the potential to violate surface water quality standards or WDRs; violate groundwater quality standards or WDRs; contaminate public water supply; and otherwise substantially degrade water quality. However, these impacts would be less than significant because the Proposed Project would be in compliance with NPDES requirements, CCR Title 27 requirements, and Orders and WDRs issued by the RWQCB. The Proposed Project will include preparing and implementing a SWPPP and SWMP in accordance with a General Permit, in accordance with NPDES requirements, and in accordance with RWQCB. The Proposed Project will also meet or incorporate siting and design features in accordance with Title 27, Chapter 3, Subchapter 2 and will implement the required water quality monitoring and response programs for detecting, characterizing, and responding to releases to groundwater, surface water, or the unsaturated zone in accordance with CCR Title 27, Chapter 3, Subchapter 3. The monitoring programs will be implemented to ensure no impairment of beneficial use of surface water or groundwater beneath or adjacent to the landfill. Therefore the Proposed Project will not result in significant impacts to surface water and groundwater.

Furthermore, implementation of design features, as well as required implementation of best management practices for stormwater runoff at each cumulative project, would mitigate potential cumulative impacts to below a level of significance. Therefore, cumulative projects are not expected to significantly impact the quality of groundwater.

ES.6.5 Biological Resources

The Proposed Project has the potential to result in direct and indirect impacts to plant and wildlife communities, as described below.

Potential Impacts to Vegetation Communities

Proposed Project implementation would result in approximately 276 acres of permanent vegetation impacts throughout the life of the landfill. Ground-disturbing activities may also promote the establishment of invasive plant species and noxious weeds and potentially degrade surrounding communities. Native vegetation communities such as Riversidean Coastal Sage Scrub and Southern Mixed Chaparral have a relatively high biological value, and along with non-native habitats on the site, provide nesting, foraging, roosting, and denning opportunities for many species of wildlife. The impact of loss or degradation of these habitats is anticipated to be less than significant given the small acreage of impacts and availability of alternate large areas of similar habitat, both locally and regionally. In addition, landfill areas would be revegetated with native vegetation when retired from use, offering some compensation from habitats lost during Proposed Project implementation, and further reducing impacts. With mitigation, potential impacts to vegetation communities would be less than significant.

Potential Impacts to California Department of Fish and Wildlife and United States Army Corps of Engineers Jurisdictional Areas

United States Army Corps of Engineers (USACE) and California Department of Fish and Wildlife (CDFW) jurisdictional areas could potentially be permanently impacted from grading and filling activities. In the event that any jurisdictional areas are confirmed at CCL, potential losses would include riparian vegetation associated with seasonal washes, including mule fat scrub, Mexican elderberry, and potentially scattered Fremont cottonwood. The permanent loss of CDFG and USACE jurisdictional areas would be considered a significant impact. Impacts would be quantified during the permitting process.

Additional impacts may potentially occur in waterways from construction or operational changes to water quality. Permanent sediment basins are present along all drainages at CCL prior to discharging offsite. These basins capture and retain water quality contaminants with sediments. CCL provides periodic clearing and cleaning of sediment basins. Contaminants captured within these basins are carried away and disposed of within portions of the landfill during maintenance. The operation and maintenance of these basins provides additional mitigation for water quality impacts.

With mitigation, potential impacts would be less than significant.

Potential Impacts from Nuisance Wildlife

Landfill operation may result in the introduction and success of nuisance wildlife, including gulls, ravens, brown-headed cowbirds, common starlings, and rats (*Rattus* ssp.). These species can displace native wildlife. Negative impacts from vectors and nuisance wildlife in general would be reduced with mitigation, ensuring that potential impacts from nuisance wildlife are less than significant.

Potential Impacts to Special-Status Plant Species

Federal- and state-listed plant species that could occur in the vicinity of CCL include Braunton's milk-vetch, California orcutt grass, San Fernando Valley spineflower, and slender-horned spineflower. California Native Plant Society List Category 1A and 1B plant species include Los Angeles sunflower, Plummer's mariposa lily, short-tailed beavertail, and slender mariposa lily. Database analyses indicate limited distribution of these species in the vicinity of CCL. However, there is a limited potential for occurrence of some of the special-status plants at CCL. If individual federal- and state-listed plant species are present at CCL, as well as sizable populations of Category 1B plants, they may be lost through Proposed Project implementation. This would represent a significant impact. With mitigation, the impacts to special-status plants would be reduced to below the level of significance.

Rayless ragwort is a Category 2 plant species with potential for occurrence in the vicinity of CCL; however, because of the low probability of occurrence, no impacts to this species are anticipated from Proposed Project implementation.

Pre-construction rare plant surveys would be conducted and, where feasible, where rare plants are identified, the area would be excluded and avoided. However, some rare plants may be identified in areas that cannot be effectively excluded or avoided. Where this occurs, loss from the Proposed Project would be a significant impact. Mitigation has been provided to address this contingency. Since it is unknown what plants, if any, would be found prior to surveys, consultation with appropriate regulatory agencies and specialists in conservation of the identified species will identify potential for appropriate salvage and relocation of soil or seeds, or purchase of offsite property.

Potential Impacts to Special-Status Wildlife Species

Proposed Project implementation would result in the loss of habitat for several special-status wildlife species expected to occur at CCL. For those species not observed but expected to occur at CCL, potential impacts were evaluated based on the habitat for which the species is expected to occupy. For aquatic species (fish and amphibians), downstream effects to aquatic habitats, primarily through potential impairment of water quality

in Castaic Creek and Santa Clara River, were evaluated. These species are discussed in further detail in the remainder of this section.

Potential Impacts to Downstream Water Quality

The Santa Clara River downstream of the Proposed Project has Beneficial Uses, warm freshwater habitat (WARM), wildlife habitat (WILD), rare/threatened/endangered species (RARE), and wetland habitat (WET). Special-status fish species that occur downstream of CCL include arroyo chub, Santa Ana sucker, southern steelhead trout, and unarmored threespine stickleback; all are known to occur in portions of the Santa Clara River or Castaic Creek. Additional special-status amphibians that may occur downstream include California red-legged frog, coast range newt, southwestern arroyo toad, and western spadefoot. Aquatic reptiles are also documented to occur downstream, including southwestern pond turtle and two-striped garter snake.

Chapter 7.0 addresses water quality impacts for the Proposed Project, including impacts to downstream receiving waters. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality, including those associated with urban runoff.

Potential Impacts to Special-Status Amphibians

Special-status species in the area include the California red-legged frog, arroyo toad, western spadefoot, and coast range newt. Proposed Project implementation would not impact critical habitat for any of these species and therefore no direct impacts to these species are anticipated. The east canyon and detention basin at CCL may hold water long enough to support breeding amphibians. Due to the presence of potential habitat for western spadefoot, this species has a moderate potential to occur at CCL.

Potential Impacts to Special-Status Reptile Species

The following special-status reptiles have the potential to occur in the vicinity of CCL: coastal western whiptail, San Diego horned lizard, California legless lizard, southwestern pond turtle, and two-striped garter snake. The southwestern pond turtle and two-striped garter snake have no suitable aquatic habitat onsite; therefore, no impacts to these species would occur.

Special-status lizard species likely to be associated with the grassland, coastal scrub, and chaparral habitats at CCL include coastal western whiptail and California legless lizard. The San Diego horned lizard may be associated with dry wash, coastal scrub, or chaparral habitats at CCL. Direct, permanent loss of these habitats would occur from grading and filling activities. Heavy vehicle traffic and other associated construction impacts could also result in direct mortality or injury of the species. These impacts are considered to be adverse but less than significant, because these populations occur in other areas of their geographic range, and impacts from Proposed Project implementation are not likely to substantially lower the regional populations of these species below a viable level. Given the relatively small acreage of impacts and availability of alternate large areas of such habitat, locally and regionally, potential impacts to these habitats are considered less than significant.

Potential Impacts to Federal- and State-Listed Bird Species

California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and California condor are all federal- and state-listed species with potential to occur in the general vicinity of CCL. Marginal, potential nesting habitat for coastal California gnatcatcher occurs in the form of Riversidean coastal sage scrub, and where adjacent to sage scrub, southern mixed chaparral habitat. If gnatcatcher are present at CCL, the loss of occupied habitat, individuals, or nests of this species would represent a significant adverse impact. Designated critical habitat for gnatcatcher occurs over 5 miles south and southeast of CCL; however, no impacts to designated critical habitat would occur from Proposed Project implementation.

CCL does not support lowland riparian habitats that are suitable nesting and breeding habitat for least Bell's vireo and southwestern willow flycatcher. No physical impacts to downstream riparian habitat would occur from Proposed Project implementation. Indirect impacts from changes in water quality could adversely affect

the habitat and forage of these birds. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion of surface runoff. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality. Additionally, previously proposed mitigation measures for biological resources will reduce the potential for downstream water quality changes.

With implementation of required water quality monitoring and response programs and biological resources mitigation measures, the impacts to downstream water quality are anticipated to be less than significant. This would include less- than- significant impacts on Beneficial Uses, including the fish, wildlife, and wetland habitat uses. With mitigation, no impacts to least Bell's vireo or southwestern willow flycatcher are anticipated.

CCL does not support nesting habitat for California condor, but does support potential forage habitat for this wide-ranging species. Proposed Project implementation may render the site unsuitable for condor foraging due to construction and/or operation activities. In general, condors are expected to avoid the area due to current operational activities. Given the large extent of foraging habitat in the region and the wide-ranging nature of the species, the loss of this area as potential forage would not represent a significant impact.

Potential Impacts to Nesting Bird Species of Special Concern

The federal Species of Concern or state Species of Special Concern with potential to nest directly on the landfill include loggerhead shrike, California horned lark, short-eared owl, and burrowing owl. Yellow-breasted chat, tricolor blackbird, and California yellow warbler might nest in downstream riparian habitats.

Potential for the California horned lark, short-eared owl, and loggerhead shrike to occur and breed at CCL is moderate to high. Construction activities involving grading and filling would result in direct permanent loss of nesting and foraging habitat. Although extensive habitat for these species is present in the region, California horned lark and loggerhead shrike are much diminished in their coast populations and short-eared owl has become rare everywhere. Any removal of inhabited area could affect these species adversely. Therefore, impacts from loss of habitat for these species are considered to be significant, and mitigation is required. Direct loss of nesting individuals of these species may also occur during construction activities. Mitigation measures would be implemented to avoid impacts to nesting birds.

Grassland habitat at CCL provides limited potential breeding and foraging habitat for burrowing owl. However, there are no known records of occurrence of this species in the vicinity of CCL, and the species was not observed during field surveys. If the species is present, Proposed Project implementation would result in loss of burrowing owl habitat. This impact, although adverse, would not be significant, because the landfill represents marginal habitat and higher quality habitat is present elsewhere in the area. To avoid direct impacts to nesting birds, avoidance and mitigation measures would be implemented. With these measures, no significant impacts to burrowing owl would be anticipated.

No physical impacts to downstream riparian habitat would occur from Proposed Project implementation. Indirect impacts from changes in water quality could adversely affect the habitat and forage of these birds. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion of surface runoff. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality. Additionally, previously proposed mitigation measures for biological resources will reduce the potential for downstream water quality changes. With implementation of required water quality monitoring and response programs and biological resources mitigation measures, the impacts to downstream water quality are anticipated to be less than significant. This would include less-than-significant impacts on Beneficial Uses, including the fish, wildlife, and wetland habitat uses. With mitigation, no impacts to yellow-breasted chat, California yellow warbler, or tricolored blackbird are anticipated. Lighting impacts to nearby riparian areas from night lighting at CCL would be avoided through the use of directional shading, as specified in mitigation measures.

Potential Impacts to County Nesting Birds of Special Concern

Potential for the California horned lark, short-eared owl, and loggerhead shrike, County Nesting Birds of Special Concern, to occur and breed at CCL is moderate to high. Construction activities involving grading and filling would result in direct permanent loss of nesting and foraging habitat. Although extensive habitat for these species is present in the region, California horned lark and loggerhead shrike are much diminished in their coast populations and short-eared owl has become rare everywhere. Any removal of inhabited area could affect these species adversely. Therefore, impacts from loss of habitat for these species are considered to be significant, and mitigation is required. Direct loss of nesting individuals of these species may also occur during construction activities. Mitigation measures would be implemented to avoid impacts to nesting birds.

Potential Impacts to Foraging or Transient Bird Species of Special Concern (Passerines)

Tricolored blackbird was detected in the immediate vicinity of CCL during field surveys. However, there is no suitable nesting habitat; therefore, there is no potential for this species to nest onsite. Annual grasslands provide limited foraging habitat for this species although, in general, it prefers agricultural areas or landfills. The loss of marginal forage habitat for this species is not expected to represent a significant impact; however, the impact is generally not known because the local population size is unknown.

Breeding habitat for the California yellow warbler is not present at CCL. Transient birds may occur in chaparral or mule fat habitats onsite. The loss of this habitat for migrating individuals of this species would not represent a significant impact because other mulefat habitat exists in the region.

Potential Impacts to Foraging or Transient Bird Species of Special Concern (Raptors)

Golden eagle, white-tailed kite, and prairie falcon occur in the region and have the potential to forage over grasslands and open country at CCL. With Proposed Project implementation, approximately 125 acres of grassland habitat would be lost. The loss of this additional grassland raptor foraging habitat would represent a significant adverse impact to these species. Mitigation measures for this impact would consist of revegetation of adjacent landfill area with grassland species upon closing and setting it aside as raptor foraging habitat. With mitigation, the impact would be less than significant.

Cooper’s hawk was observed foraging onsite in chaparral habitats during field surveys. Since there are abundant riparian and chaparral habitats in the region, the loss of this foraging habitat would not represent a significant adverse impact.

Potential Impact to Special-Status Mammals (Excluding Bats)

The San Diego black-tailed jackrabbit has a high potential for occurrence at CCL, and the San Diego desert woodrat has a moderate potential for occurrence at CCL. Grading and filling activities from Proposed Project implementation would result in direct, permanent loss of habitat for these species. Some direct mortality of these species also might occur during construction. Despite substantial acreage of appropriate habitat, the jackrabbit is very diminished as a coastal population. The subspecies could drop below self-sustaining levels. Implementation of mitigation to include landfill revegetation would reduce potential adverse effects to less than significant.

The loss of potential habitat for San Diego desert woodrat would represent adverse but less-than-significant impacts to the species, given the substantial acreage of such habitats occur regionally. The impacts would not be expected to reduce local populations below self-sustaining numbers.

Potential Impact to Special-Status Mammals (Bats)

Suitable habitat is present at CCL for both roosting and foraging for long-eared myotis, long-legged myotis, and Yuma myotis, federal Species of Concern; and the California leaf-nosed bat, pallid bat, western mastiff bat, big free-tailed bat, cave myotis, Mexican long-tongued bat, pocketed free-tailed bat, spotted bat, Townsend’s western big-eared bat, California Species of Special Concern. Proposed Project implementation would result in the loss of forage habitat and may cause direct or indirect impacts to roost sites. Direct impacts would result

from destruction or filling of roost sites; indirect impacts may result from roost disturbance or abandonment from construction or operation activities. The loss of foraging habitat would not be considered a significant impact, because abundant similar forage habitat occurs in the region. In addition, because abundant sandstone outcrops occur in the mountains and ridges of this region, roost sites for bats that utilize small crevices and caves would not be considered limiting. As such, the loss or abandonment of roost locations is not anticipated to represent a significant impact.

Potential Impact to Special-Status Fish

No aquatic habitat is present on CCL that would support the arroyo chub, the Santa Ana sucker, the southern steelhead trout, or the unarmored threespine stickleback; as such, there would be no physical impact to these species from Proposed Project implementation. Critical habitat for the southern steelhead trout is designated to the west of the landfill, but the Proposed Project implementation would not impact the critical habitat.

The unarmored threespine stickleback is known to be a year-round resident of the Santa Clara River from the confluence of the Santa Clara River and Castaic Creek to I-5. It occurs in the area downstream of the Castaic confluence as far as the Ventura Border during the rainy season and was encountered broadly in the area during surveys for the Newhall Ranch development in the adjacent parts of the river. This area is a part of its essential habitat. The original Significant Ecological Area (SEA) #23 was developed along the Santa Clara River by the County of Los Angeles in part to protect unarmored threespine sticklebacks. Potential for downstream changes in water quality that could affect these species are addressed in Chapters 6.0 and 7.0 of this DEIR. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion from surface runoff. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality. Additionally, previously proposed mitigation measures for biological resources will reduce the potential for downstream water quality changes. With implementation of required water quality monitoring and response programs and biological resources mitigation measures, the impacts to downstream water quality area anticipated to be less than significant.

Potential Impact to Wildlife Movement Corridors

Some local wildlife movement may occur along ridgelines or valleys within the general vicinity of CCL. Two major wildlife corridors are known in the vicinity, the Santa Clara River and the Santa Monica-Sierra Madre Connection, and CCL could contribute slightly to movement along both these pathways. Impacts to the Santa Clara River corridor, which may include water quality effects, would be reduced to less-than-significant impacts through implementation of all required water quality monitoring and response programs and proposed mitigation.

Because CCL does not occur directly within the identified Santa Monica-Sierra Madre Connection, but is to the east of this linkage, it is unknown how much the site contributes to wildlife movement within this corridor. Many of the steeper ridgelines will be generally left undisturbed by the Proposed Project, and the existing landfill may currently constrain wildlife movement through the heart of the CCL site. Alternatively, some wildlife may move through the site at night. Mitigation measures associated with water quality, night lighting, and site revegetation would be implemented to address the potential for impacts to wildlife corridors.

Potential Impacts Under Local Policies, Ordinances, and Conservation Plans

Local policies or ordinances protecting biological resources will be complied with, including SEAs designated by the County of Los Angeles. The nearest SEA in the vicinity is along the Santa Clara River, south of CCL. Potential impacts to biological resources or water quality in the Santa Clara River ecosystem are anticipated to be less than significant with mitigation measures.

In addition, no federal Habitat Conservation Plans or state Natural Community Conservation Plans would be affected by Proposed Project implementation. No impacts are anticipated.

Potential Impacts to Protected Oak Trees

The Oak Tree Report (SB Horticulture, 2014) identified a total of three coast live oak and one valley oak that qualify for protection under the County Oak Tree Ordinance. One former heritage coast live oak was identified as deceased. The Project has generally avoided impacts to protected trees, but would require the removal of four protected oak trees due to their location in the landfill development area. An oak tree permit would be acquired for removal of the qualifying oaks and all permit terms and conditions would be complied with.

Cumulative Impacts

The cumulative loss of the most abundant habitats would potentially reduce the regional subpopulation numbers of sensitive species, which forage and breed in these open habitats. Although the Proposed Project will reduce the extent of some intact open habitats, mitigation measures have been proposed, which would reduce the impacts to sensitive species that may use those habitats to levels below significance. The development of the majority of the open habitats in the area could eventually reduce the raptor populations in the region. The Proposed Project would contribute to the incremental loss of these habitats, although the limited biological resources onsite would make its contribution minimal. Cumulative projects in the region could eventually sever wildlife habitat connectivity. Major movement corridors are known in the vicinity of CCL. The contribution of the CCL land to these corridor movement and linkage areas is unknown but not anticipated to be substantial. Mitigation measures proposed for the Project would ensure that the Project's potential contribution to impacts associated with corridor movement and linkage areas are less than significant.

ES.6.6 Cultural and Paleontological Resources

The potential direct and indirect impacts to cultural and paleontological resources are summarized below.

Potential Impact to Bowers Cave (CA-LAN-36)

Bowers Cave (CA-LAN-36) is located within the proposed area of disturbance of the Proposed Project. However, Mitigation Measure CR-1 states that grading plans should clearly depict the sensitive area of CA-LAN-36. A buffer around this sensitive area will be established in consultation with a qualified archaeologist and the Permittee, and grading will not occur beyond this established buffer.

Therefore, grading will not impact the cave. The view from the cave will not be significantly altered as the landfill is currently clearly visible from the cave. Mitigation Measure CR-1 also states that a qualified archeologist shall monitor earth-moving activities that would occur within close proximity to the established buffer.

The Proposed Project will not directly affect any historical resources as defined by CEQA. The areas delineated for extension of the grading footprint have already been archaeologically surveyed with negative results; no historical resources are present. The archaeological survey conducted in 2010 confirms the presence of CA-LAN-36 within the Proposed Project, and Mitigation Measure CR-1 will be employed to avoid impacts to the cave.

Potential Impacts to Additional Cultural Resources

The current inventory has demonstrated that the survey area contains prehistoric and historical archaeological resources. Further, the geomorphological environment of CCL is one of alluvial deposition. As with any ground-disturbing project, there remains a potential for the accidental discovery of buried cultural resources not detected through a surface inventory; therefore, Mitigation Measure CR-2 would be followed. Mitigation Measure CR-3 would be implemented if buried cultural resources are found during ground disturbance.

Potential Impacts to Paleontological Resources

The Proposed Project will not directly affect any known paleontological resources as defined by CEQA. The areas delineated for extension of the grading footprint have already been archaeologically surveyed with negative results; no paleontological resources were detected.

The Proposed Project (excavation of new cells) and the landfill operation (acquisition of daily cover) could adversely affect presently undetermined/unrecorded fossil sites. Direct impacts would result mostly from earth moving in previously undisturbed strata but also from any earth-moving activity that buried previously undisturbed strata, making the strata and their paleontological resources unavailable for future scientific investigation. As with any ground-disturbing project, there remains a potential for the accidental discovery of buried paleontological resources. Easier access to fresh exposures of fossiliferous strata and the potential for unauthorized collecting by landfill personnel, rock hounds, and amateur and commercial fossil collectors could result in the loss of some additional fossil remains, unrecorded fossil sites, and associated specimen data and corresponding geologic and geographic site data. The loss of these additional paleontological resources is another potentially significant long-term environmental impact.

Measures are proposed to mitigate impacts to paleontological resources in the upper Pico and Saugus Formations, which have both yielded fossil remains from fossil sites near CCL, because there is a high potential for the loss of scientifically important fossil remains, unrecorded fossil sites, and associated specimen data and corresponding geologic and geographic site data. With mitigation, impacts upon paleontological resources as a result of the Proposed Project would be reduced to below the level of significance.

Any adverse environmental impact on paleontological resources resulting from earth moving in the younger alluvium would be of low significance, since it is probably too young at and near the surface to contain remains old enough to be considered fossilized. There would be no impact on paleontological resources associated with earth moving in the artificial fill, which is unfossiliferous.

Potential Cumulative Impacts to Cultural and Paleontological Resources

Impacts to known significant archaeological sites or subsurface archaeological resources from the Proposed Project and other projects in the vicinity could occur. However, project proponents for this and future projects in the area can mitigate impacts to known significant and as yet undiscovered subsurface archaeological sites by implementing mitigation measures. If a large, stratified, buried prehistoric archaeological site or discrete filled-in historic period features were encountered during the Proposed Project, the possibility of cumulative impacts would arise, because such sites might be highly significant, and in the past, others have been destroyed or damaged by agricultural activity and/or commercial/industrial/residential development near the Proposed Project.

However, given the relative low level of impact to such a site that the Proposed Project would cause, it is also possible, but unlikely, that Proposed Project activities would lead to significant cumulative impacts. The potential impact will depend on the extent of any discovered archaeological deposits. The Proposed Project's contribution to this cumulative impact is considered adverse but not significant. Any potential impact to a known significant cultural resource would be mitigated to a level of insignificance; and potential impact to an unknown site would be minimized by a stop-work procedure if a site were uncovered, allowing time for proper survey and mitigation of the site to occur. No impacts to architectural resources are expected to occur.

ES.6.7 Traffic and Transportation

The potential traffic impacts related to the Proposed Project were evaluated based on the traffic impact requirements of the Congestion Management Program (CMP) for Los Angeles County. The analysis focuses on onsite circulation and access, as well as offsite traffic impacts, and addresses the Proposed Project impacts at area intersections. The Proposed Project is estimated to generate 2,332 net new daily trips, of which approximately 6.4 percent will occur in the a.m. peak hour and 6.5 percent will occur in the p.m. peak hour. Based on the analysis, the Proposed Project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system; substantially increase hazards due to a design feature; result in inadequate emergency access or parking capacity; or conflict with adopted policies, plans, or programs supporting alternative transportation. The Proposed Project would temporarily exceed a level of service (LOS) standard established by the regulatory agency.

All of the study intersections will operate at LOS D or better in Existing plus Growth plus Project conditions and will not exceed Los Angeles County traffic impact thresholds. However, the Proposed Project will have a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. The intersection of Commerce Center Drive and SR-126 will be under construction in 2015 as part of the Commerce Center Drive/SR-126 improvement project. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection will return operations to LOS D or better during both peak hours. Therefore, no mitigation is required of the Proposed Project since mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project.

Review of the queue lengths at the I-5 off-ramps shows that the peak-hour queue lengths do not exceed the available off-ramp storage in Existing plus Growth plus Project conditions. There would be no impact. The new CCL entrance is proposed to improve access to the site and will not substantially increase hazards due to a design feature or affect emergency access to the site or any other property. The queuing analysis shows that the storage provided at the CCL main entrance will be able to accommodate the projected number of vehicles arriving at the site throughout the day and will provide enough storage to accommodate projected CCL traffic without queuing onto public roadways. Queuing calculations were also done for the HHWF driveway. The analysis shows that the HHWF can accommodate up to 243 vehicles on a typical event day without queuing through the CCL main entrance driveway. Intersection spacing on Wolcott Way between Franklin Parkway and SR-126 was also evaluated, and it was determined that adequate storage exists on Wolcott Way to accommodate the increase in traffic due to the proposed CCL entrance.

Sufficient parking will be provided onsite to meet the anticipated parking needs of the Proposed Project. No offsite parking will be needed. As a result, the Proposed Project will not result in impacts to parking capacity. The Proposed Project will not conflict with adopted policies, plans, or programs supporting alternative transportation as there will be no changes related to alternative transportation. Construction of the Proposed Project will occur entirely onsite and will not affect transit, bicycle facilities or other forms of alternative transportation.

Potential Interim Impacts

The short-term cumulative traffic impact analysis considers the combined traffic impacts of the Proposed Project (in addition to an ambient growth rate) with a subset of the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis. Based on the analysis, the impacts would be the same as identified for the Existing plus Growth plus Project conditions. No additional impacts beyond those previously identified would occur. The Proposed Project will have a significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection will return operations to LOS D or better during both peak hours. Therefore, no mitigation is required of the CCL project since mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project.

Potential Cumulative Impacts

Operation of the Proposed Project will continue for an additional 21 to 38 years depending on when the landfill reaches final grade, thus overlapping with construction and operation of the surrounding cumulative projects. Based on the SR-126 Improvements Project, traffic conditions at the SR 126/Commerce Center Drive intersection will be improved over existing conditions and the project is proposed to accommodate future traffic growth in the area. Furthermore, surrounding proposed Newhall Ranch developments would require detailed CEQA analysis and adequate mitigation measures; therefore it is reasonable to assume that they would also include mitigation measures (including roadway and intersection improvements) to reduce any cumulative traffic impacts on the surrounding road network to a less-than-significant level. Therefore, the long-term cumulative

impact that would result from the combination of the Proposed Project's incremental impact and the effects of other projects is not considered to be significant.

ES.6.8 Air Quality

Temporary impacts from construction of the Proposed Project were evaluated for the pollutants nitrogen oxides (NOx), reactive organic gases (ROG), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with aerodynamic diameter less than or equal to 10 microns (PM_{10}), and particulate matter with aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$). Construction equipment and vehicle exhaust would be the primary sources of NOx, ROG, CO, SO_2, and $PM_{2.5}$ emissions, while excavation and grading activities would be the primary sources of PM_{10} emissions. Given the short duration of each construction period (approximately 6 months every 18 months to 5 years), the conservativeness of the emission estimates for determining maximum daily construction emissions, the large size of the Proposed Project site, and characteristics of the construction emission sources, modeled ambient air quality impacts at offsite receptors would be less than significant. Therefore, although the Proposed Project construction periods may temporarily exceed the mass daily emission thresholds, the overall impact from construction activities would be less than significant based on modeled ambient impacts from criteria pollutant emissions. Furthermore, Project Design Measures, including construction equipment and fugitive dust control measures will be implemented by CCL as part of the Proposed Project to control exhaust or fugitive dust emissions.

Construction activities associated with the Proposed Project would result in a net increase in daily mass emission estimates of the nonattainment pollutant ozone precursors (NOx or ROG). Construction-related impacts would be less significant due to implementation of the Project Design Measures, including construction equipment and fugitive dust control measures. Construction would not expose sensitive receptors to substantial pollutant concentrations, and construction impacts would be less than significant.

South Coast Air Quality Management District air quality plans (SCAQMD, 1997; 1999; 2013d) and the air quality objectives in the City of Santa Clarita Draft General Plan Update (City of Santa Clarita, 2010) were reviewed to determine whether the Proposed Project would conflict with air quality plans. SCAQMD's plans present the strategies and control measures needed to continue to improve air quality in the SCAB. Upon review, it was determined that implementation of the Proposed Project would be consistent with applicable air quality plans; therefore impacts would be less than significant.

Impacts from operation were also evaluated for the pollutants NOx, ROG, CO, SO_2, PM_{10}, and $PM_{2.5}$. Operation-related emissions would result from vehicle exhaust emissions, fugitive dust, flare emissions, and fugitive LFG. Given the conservativeness of the emission estimates for determining maximum daily emissions and the variability of operations of the facility day-to-day, these increases in maximum daily emissions would result in a less-than-significant modeled ambient impact on air quality at offsite receptors. Therefore, although the Proposed Project maximum emissions periods may temporarily exceed the mass daily emission thresholds, the overall impact from operational activities would be less than significant based on modeled ambient impacts from criteria pollutant emissions.

A CO hotspot analysis of the worst intersections and dispersion modeling of emissions from operation activities were conducted to evaluate whether an air quality standard would be violated. Based on the modeled results, the Proposed Project would not cause or significantly contribute to a modeled CO violation. Therefore, operation of the Proposed Project would have a less-than-significant impact for CO at offsite receptors and at hotspots near roadways.

Operation of the Proposed Project would result in a net increase in emissions of the nonattainment pollutant, ozone precursors (NOx or ROG). However, operation impacts would be less than significant due to implementation of off-road diesel equipment and fugitive dust control measures.

Operation would not expose sensitive receptors to substantial pollutant concentrations and would not create objectionable odors affecting a substantial number of people. CCL has sensitive receptors near its boundaries,

but based on the existing complaint history and current operational practices, the odor-related impacts are less than significant.

Impacts have been mitigated to the extent feasible through the implementation of Project Design Measures. Therefore additional mitigation measures have not been identified.

Potential Cumulative Impacts

PM_{10} annual and PM_{10} and $PM_{2.5}$ 24-hour cumulative concentrations would exceed their respective thresholds for project years 2021 and 2032, primarily due to fugitive dust from travel on onsite paved roads. Continuous watering of onsite paved roads to mitigate PM_{10} and $PM_{2.5}$ cumulative impacts was considered; however, it was determined that mitigation would not be feasible because of water availability concerns in the project area. Therefore, the overall cumulative impact from operational activities would be significant and unavoidable for PM_{10} and $PM_{2.5}$ based on modeled ambient impacts from criteria pollutant emissions. Impacts would not occur until construction of the proposed Newhall Ranch developments.

ES.6.9 Greenhouse Gas Emissions and Climate Change

Implementation of the Proposed Project would generate construction-related GHG emissions. However, these emissions are not included in the 7,000-metric-ton of carbon dioxide equivalent per year threshold and would not hinder or delay California's ability to meet the reduction targets contained in AB 32. Best management practices to reduce air pollutant emissions during construction also reduce GHGs, including minimization of equipment and vehicle idling and maintenance of equipment and vehicles according to manufacturer's specifications.

Operation of the Proposed Project would result in the generation of GHG emissions from energy use, onsite equipment exhaust, LFG generation and flaring, and disposal truck/worker vehicle trips. The GHG emissions from the Proposed Project would exceed the significance threshold, and therefore impacts resulting from operation of the Proposed Project would be significant. However, the Proposed Project includes continued operation of a comprehensive LFG collection and removal system and implementation of all feasible mitigation measures to reduce GHGs. These measures include implementing the CARB interim performance standards (see Mitigation Measure GHG-1); submitting a GHG Reduction Plan within 3 years of project approval (see Mitigation Measure GHG-2); using the smallest equipment possible for operations at the landfill to minimize tailpipe exhaust emissions (see Mitigation Measure GHG-3); and following energy conservation practices (see Mitigation Measure GHG-4). Implementation of the mitigation measures would result in less than significant impacts associated with GHG and Climate Change. Furthermore, studies have shown that landfills may have carbon storage in excess of GHG emissions from landfills. When wastes of a biogenic origin are deposited in landfills and do not completely decompose, the carbon that remains is effectively removed from the global carbon cycle, or sequestered. Amounts of CO_2e sequestered by the Proposed Project were not quantified as part of the analysis, but it is assumed that the total net GHG emissions associated with the Proposed Project may be less than presented.

Potential Cumulative Impacts to Climate Change

Analysis of a project's contribution to global climate change is inherently cumulative and to a considerable degree speculative. A good faith effort at disclosing and evaluating the Proposed Project's potential impact as a portion of climate change associated with buildout of the Santa Clarita Valley Specific Area Plan in Los Angeles County was conducted. Cumulative buildout of the Santa Clarita Valley area would increase GHG emissions by increasing overall population, square footage of commercial, industrial, and other supplementary uses, and by increasing traffic and the associated transportation emissions that make up 38 percent of statewide GHGs. Without corresponding GHG reduction strategies across all new projects and development, significant impacts would occur. However, the analysis of the Proposed Project demonstrates that potential GHG emissions impacts are not significant, and therefore would not hinder or delay California's attainment of AB 32 objectives.

Therefore, the GHG effects of the Proposed Project would not be a significant cumulative impact. No additional mitigation measures beyond those described above are required.

ES.6.10 Noise

Construction activities would result in a temporary direct increase in ambient noise levels around the area. The actual increase in ambient noise levels would depend on the construction activity occurring, and the number and mix of construction vehicles and equipment in use. Construction activities would occur during the day when residents are typically less sensitive to noise than they are at night. The estimated construction noise levels at existing surrounding sensitive land uses would be below the statutory requirements of the County of Los Angeles, resulting in a less-than-significant impact.

The operation-related noise at all the existing noise sensitive areas is also expected to be below the statutory requirements of the County of Los Angeles. Furthermore, noise from landfill operations would not cause an appreciable change in existing noise levels at any noise sensitive areas in the vicinity of CCL. In addition, truck and other vehicular traffic to and from the landfill will use SR-126. Project-generated traffic is, and will continue to be, a very small percentage of total vehicle volume on SR-126, and would, therefore, result in negligible changes to traffic noise levels in the area. Finally, the cumulative noise exposure due to simultaneous construction and operation of the Proposed Project in combination with the related projects would result in noise levels below the County's requirement. Therefore, no significant cumulative impact would result.

ES.6.11 Public Services and Utilities

The Proposed Project would not result in any changes that would result in a significant impact to public services and utilities. The Proposed Project would require approximately 25 additional staff at CCL. This small influx of population represents a negligible effect and would not require additional staffing for police and fire services. In addition, it would not diminish the level of service for existing community facilities, electrical supplies, water supplies, and sewage disposal. A Water Supply Assessment has been prepared for the Proposed Project by the Valencia Water Company documenting the availability of water to serve the Project. Therefore, the Proposed Project would not result in a significant impact to public services and utilities.

ES.6.12 Visual Resources

Visual resources impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

Two primary project elements would change the visual landscape of CCL: (1) the new entrance, and (2) landform alteration in the form of the waste footprint extension. These changes would not have a substantial adverse effect on scenic vistas or scenic highways as none are present in the vicinity of the Proposed Project. However, the project elements would degrade the existing visual character of the site and its surroundings. Construction of the relocated entrance would result in short- and long-term impacts that would be visible to travelers along a limited stretch of SR-126. The expanded waste footprint and fill would be visible from several locations near the Proposed Project site and would, to varying degrees, diminish visual quality. Neither project element, however, would result in a significant change to the visual landscape surrounding CCL. The changes at the landfill would be only marginally visible from most locations and, given the intense level of development in the landfill vicinity, the landform alteration is not anticipated to be out of scope or scale with surrounding development.

Though new sources of temporary and permanent lighting would be required at CCL, they would be similar to the existing lighting at the site, and would not be new sources of substantial light or glare that would adversely affect day or nighttime views. No mitigation would be required.

The effect of the cumulative projects would likely be a substantial change to the visual landscape in the vicinity of CCL. Specifically, recent and proposed developments would result in the continued transition of a slightly

rural, less developed area into a more developed urban landscape. While the Proposed Project would incrementally contribute to the changes to the landscape in the vicinity of CCL, these changes would not substantially degrade the existing visual character or quality of the site and its surroundings. As such, potential impacts are considered less than significant, and no mitigation for cumulative impacts would be required.

ES.6.13 Environmental Justice and Socioeconomics

The Proposed Project would not disproportionately affect a minority population or a low-income population, and potential environmental justice impacts are considered less than significant. The Proposed Project would maintain the intended land uses of the site, and would not conflict with applicable land use plans or adopted policies. Finally, the Proposed Project would not directly or indirectly induce population growth and would not displace existing housing or people; therefore, potential socioeconomic impacts are considered less than significant.

ES.7 Summary of Project Impacts and Mitigation

The Proposed Project would not result in a significant impact to the following resource areas. No mitigation is proposed.

- Land Use
- Water Quality
- Air Quality[1]
- Noise
- Public Services and Utilities
- Visual Resources
- Environmental Justice and Socioeconomics

Table ES-1 summarizes the potential significant impacts that have been identified by resource area and describes the mitigation measures to be implemented to reduce the impact below the level of significance.

[1] This EIR finds that PM_{10} annual and PM_{10} and $PM_{2.5}$ 24-hour cumulative concentrations would exceed their respective thresholds under the cumulative project scenario during 2 modeled project years, primarily due to fugitive dust from travel on onsite paved roads. It was determined that mitigation needed to reduce this impact (continuous watering of onsite paved roads) would not be feasible because of water availability concerns.

TABLE ES-1
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation	Level of Significance after Mitigation
Geology and Hydrology		
Potential for Proposed Project to be located on geologic unit or soil that is or would become unstable	**GH-1 Debris Flow:** Debris flow is a rapid and fluid type of downhill mass wasting, consisting of heterogeneous debris lubricated with water caused by heavy rainfall. Similar terms for debris flow are mudflow and mudslide. There is a potential for debris flow occurring at the site during heavy rains within existing drainage areas at the subject site. The proposed design shall include provisions for control and cleanup of debris flows that may encroach into the landfill cell, perimeter maintenance road, and proposed development areas. Potential mitigation measures could consist of combinations of the following mitigation measures such as elevated development areas, drainage devices, impact walls, debris basins, and avoidance. Additional debris flow evaluation and mitigation should be performed as part of future development of rough grading plans for the entrance road.	LS
Potential for Proposed Project to be located on expansive soil	**GH-2 Expansive Soil:** There is a potential for buildings and/or other structures to be located on expansive soil, because the site is underlain by bedrock of the Pico and Saugus formations, both of which contain potentially expansive clay-rich strata. Additional testing of the expansive properties of the soils may be required if buildings and/or other structures sensitive to expansive soils are planned for the site. Additional testing should be completed during the grading plan review if deemed necessary by the project geotechnical and civil engineers.	LS
Surface Water Drainage		
Potential exposure of people or structures to significant risk of loss, injury, or death from mudflow	**SW-1:** There is a potential for mudflow (i.e., debris flow) during repeated heavy rains within existing drainage areas at the subject site. The proposed design should evaluate and specify an appropriate amount of waiting time following heavy and sustained precipitation events before CCL staff occupy the area, to avoid the potential to expose people to the risk of injury or death from this debris. This would supplement Mitigation Measure GH-1, which specifies that the proposed design should allow for the cleanup or control of any debris flows that may encroach into the landfill cell and perimeter maintenance road from the natural drainages and slopes that are not included in the proposed grading and construction of drainage/debris basins.	LS
Biological Resources		
Potential impacts to vegetation communities	**BR-1:** A Revegetation Plan for the Project will be developed in consultation with LADRP. In order to replicate and potentially expand the available amount of Southern Mixed Chaparral vegetation community at the site, the Revegetation Plan will include a final soil cover of approximately 5 feet, or alternatively a depth approved by regulatory agencies and suitable to allow for proper root growth. If the cover is deemed infeasible by capacity constraints or other conditions, offsite mitigation land will be purchased to offset the loss of approximately 14.4 acres of Southern Mixed Chaparral vegetation community. The acreage acquired will, if feasible, be generally local to the site or the general site area, ideally situated adjacent to or in the general proximity of the Santa Clara River, Hasley Canyon, or Angeles National Forest, and will connect with other protected open space. **BR-2:** Preconstruction surveys by qualified biologists shall be conducted for special-status species in impact areas prior to ground-disturbing activities, over the entire disturbance area proposed for the Project, and then again over the entire area remaining to be disturbed for each phase (cell) of landfill development, and if necessary and feasible, resource relocation or exclusion shall be implemented. Resource relocation shall be conducted by qualified biologists in coordination with CDFW or USFWS. Exclusion zones shall be implemented with fencing and/or signage that restricts access. 1. For rare plants, this shall include focused surveys by a qualified botanist conducted during the appropriate season for detection (generally during flowering period) the first season prior to ground-disturbing activities over the entire disturbance area proposed for the Project, and then again over the entire area remaining to be disturbed for each phase (cell) of landfill development. If suitable transplant areas for rare plants exist at CCL, surveys will also include potential areas for relocation onsite in order to provide background data for determining transplant success. If no suitable relocation areas exist at CCL, potential mitigation areas in conserved areas within the local watersheds will be identified and surveyed at the same time in order to have background data. Surveys shall follow standard survey protocol for rare plants outlined in Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS, 2000). 2. If special-status plants are found at CCL, they shall be avoided, when feasible. To avoid impacts to special-status plants, protective measures, such as the installation of an orange plastic fencing surrounding plant or plant population and the restriction of construction activity within these protected areas shall be implemented. 3. If a sensitive plant (including species of CNPS RPR 1-4) is detected during rare plant surveys in an area identified for disturbance, consultation with CDFW will be initiated and will result in preparation of a rare plant report for review by CDFW and LADRP. Mitigation by transplantation will take place before any clearing or grading of the sensitive plant occurs. CDFW will approve the transplantation program, including methods, monitoring, reporting, success criteria, adaptive management, and contingencies. **BR-3:** Construction and construction monitoring for animals will occur at discrete time periods. Construction monitoring shall be conducted in areas containing native vegetation at the time of construction activity within the limit of active construction disturbance. Within areas containing native vegetation, ground-disturbing activities shall be prohibited until the area is cleared by a qualified biological monitor during a preconstruction survey up to seven days prior to the beginning of cell construction activities. Biological monitors shall also monitor construction activities within 100 feet of avoided CDFW and USACE jurisdictional drainages. **BR-4:** The construction area boundaries shall be delineated clearly. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside of the designated construction area. In addition, CCL ingress and egress routes shall be marked, and vehicle traffic outside these routes shall be prohibited. Vehicular traffic shall adhere to a speed limit of 15 miles per hour on non-public access roads during construction to ensure avoidance of impacts to sensitive biological resources.	LS

TABLE ES-1
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation	Level of Significance after Mitigation
Potential impacts to vegetation communities, Cont.	**BR-5:** Soil or invasive plant seed transfer from clothing, shoes, or equipment shall be minimized through cleaning and monitoring of personnel or equipment transfers between sites, or prior to initial entry at CCL. Contract requirements to ensure vehicles are pressure washed and/or clean and free of soil or invasive weed seeds and other plant parts prior to entering the site will be implemented. Contracts will specify that pressure-washing of construction vehicles is to take place immediately before bringing the vehicle to CCL. The contractor will provide written documentation that the vehicles have been pressure washed or otherwise free of plant material that is checked by both CCL management and the biological monitor, who will jointly assure that this mitigation is implemented. The biological monitoring report will include a record of compliance with this measure. Within 1 year of Project approval invasive tamarisk (*Tamarix* spp.) located onsite will be identified and removed completely. Removed tamarisk will be disposed of in a landfill. **BR-6:** Only vehicles that meet fire safety requirements shall be allowed on the construction sites. Camping, trash-burning fires, and warming fires shall be prohibited in the construction area. **BR-7:** A mitigation monitoring plan that outlines how mitigation measures specified herein shall be implemented and monitored shall be prepared and approved by LADRP prior to award of any grading permit. The Plan will address mitigation for special-status plants, including management of salvaged topsoil, relocation of offsite property that could serve as permanent open space areas or a conservation easement. The Plan shall include methods, monitoring, reporting, success criteria, adaptive management, and contingencies.	LS
Potential impacts to CDFW and USACE jurisdictional areas	**BR-3** will be implemented. **BR-8:** For potential impacts to jurisdictional waters, permits shall be obtained for the Proposed Project from USACE (Section 404, CWA) and CDFW (SAA, Section 1603); conditions of these permits would be complied with for the Proposed Project. The terms and conditions of these permits are anticipated to require mitigation consistent with "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule" (USACE, EPA, Federal Register, April 10, 2008), and with CDFW requirements for SAAs. A mitigation plan may be required prior to permit issuance. **BR-9:** Stationary equipment such as motors, pumps, generators, and welders shall be located a minimum of 50 feet outside CDFW and USACE jurisdictional drainages where impacts have not been permitted. Construction staging areas, stockpiling, and equipment storage shall be located a minimum of 50 feet outside non-permitted CDFW and USACE jurisdictional drainages. **BR-10:** Construction vehicles and equipment shall be checked periodically to ensure they are in proper working condition and that there shall be no potential for leaks. Refueling or lubrication of vehicles and cleaning of equipment, or other activities that involve open use of fuels, lubricants, or solvents, shall occur at least 100 feet away from CDFW and USACE jurisdictional drainages where impacts have not been permitted, and at least 50 feet from other flagged, sensitive biological resources. **BR-11:** Best management practices will be implemented during construction to prevent sediment from entering into non-permitted jurisdictional drainages. Existing sedimentation basins prevent sediment-laden water from draining offsite. **BR-12:** Only agency-approved pesticides, herbicides, fertilizers, dust suppressants, or other potentially harmful materials shall be applied at CCL, in accordance with relevant state and federal regulations. Rodenticides will not be used. Instead, methods that do not persist and infiltrate the natural food chain will be used for pest elimination such as trapping, gassing, etc. Sediment basins are present along all drainages at CCL, which capture run-off prior to discharging offsite. Sediment basins will continue to be regularly maintained.	LS
Potential introduction and proliferation of nuisance wildlife during operations	**BR-13:** Construction sites and landfill operation shall be kept free of trash and litter. Food-related trash and litter shall be placed in closed containers and disposed of daily. Nuisance wildlife breeding will be discouraged at CCL by excluding cavities in buildings and/or equipment or facilities left idle for more than 6 months.	LS
Potential impacts to special-status plant species	**BR-1, BR-2, BR-3, BR-4, BR-5,** and **BR-7** will be implemented. **BR-14:** Mitigation to reduce unavoidable impacts to special-status plants identified during the preconstruction surveys shall be coordinated with and approved by USFWS and CDFW and could include one or more of the following: 1. Salvaging of topsoil to store the seedbank for later spreading of the soil at a suitable location offsite or onsite 2. Relocation of the plant(s) to a suitable location offsite by a qualified botanist 3. Purchase of mitigation credits or offsite property with known populations of the affected species for inclusion in permanent open space areas or a conservation easement	LS
Potential impacts from downstream water quality changes - Temporary indirect impacts, including erosion and sedimentation	Although no offsite impacts associated with erosion and sedimentation or urban runoff are anticipated, previously proposed mitigation measures **BR-7, BR-9, BR-10, BR-11, and BR-12** will be implemented.	LS
Potential impacts to special-status amphibians	Although no impacts to special status amphibians are anticipated, previously proposed mitigation measures **BR-7, BR-8. BR-9, BR-10, BR-11, and BR-12** will be implemented.	LS
Potential impacts to special-status reptile species	**BR-1, BR-2, BR-3, BR-4,** and **BR-7** will be implemented.	LS

TABLE ES-1
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation	Level of Significance after Mitigation
Potential impacts to federal- and state-listed bird species	**BR-1, BR-2, BR-3, BR-4, BR-7, and BR-12** will be implemented. Mitigation for potential impacts to the federally listed California gnatcatcher includes the following: **BR-15:** USFWS protocol-level surveys shall be conducted for all California gnatcatcher habitat well in advance of any ground-disturbing activities. If surveys are negative, the species shall be presumed absent, and no further impacts shall be anticipated or mitigation measures required. **BR-16:** If the surveys are positive (i.e., California gnatcatcher is present), then discussions shall be initiated with USFWS on appropriate measures to avoid, minimize, or mitigate take of this species. These are likely to include: 1. Construction activities in the vicinity of active gnatcatcher nests shall be prohibited within a specified distance of nests (usually 500 feet) until after the young have fledged and the nesting is complete. 2. Clearing of occupied habitat shall be avoided if possible or practicable. If it is not practicable, clearing shall be prohibited during the nesting season (February to August).	LS
Potential impacts to nesting bird species of special concern	**BR1, BR-2, BR-3, BR-4, BR-7,** and **BR-12** will be implemented. **BR-17:** Although no nighttime construction is anticipated, lighting for construction activities conducted during early morning or early evening hours shall be minimized to the extent possible through the use of directional shading to minimize impacts to nocturnal or crepuscular wildlife. **BR-18:** In habitats where nesting birds might occur, vegetation removal shall be avoided when feasible during the nesting season (December through August); winter months are included because this area has potential for owls and hummingbirds which may breed during this period. Where this is not feasible, preconstruction surveys for nesting pairs, nests, and eggs shall occur in areas proposed for vegetation removal, and active nesting areas flagged. The biological monitor shall assign a buffer around active nesting areas (typically 300 feet for songbirds, 500 feet for raptors). Construction activities shall be prohibited within the buffer until the nesting pair and young have vacated the nests, unless it can be demonstrated through biological monitoring that the construction activity is not hindering the nesting effort. Alternatively, if unused nests are identified in the disturbance area during preconstruction surveys, nests may be destroyed or excluded prior to active nesting. **BR-19:** Finished/closed landfill areas at CCL shall be revegetated to offset permanent impacts to grassland foraging and breeding habitat. Native grass species and native forbs shall be used under the direction of specialists in restoration plantings, in accordance with the Preliminary Closure and Postclosure Maintenance Plan for Chiquita Canyon Landfill. This Plan will be updated to specify that revegetation plan development and implementation will be conducted by an ecological restoration specialist familiar with restoration of native Southern California plant communities, that revegetation will be done with locally native plants, and that revegetation will not include plant species on the County's list of invasive species nor invasive species on the lists of the California Invasive Plant Council (CalIPC) nor invasive species listed by California Native Plant Society. The Revegetation Plan identified in MM BR-1 may replace this plan at the discretion of LADRP.	LS
Potential impacts to County nesting bird species of special concern	**BR-1, BR-2, BR-3, BR-4, BR-7, BR12, BR-17, BR-18,** and **BR-19** will be implemented.	
Potential impacts to foraging or transient bird Species of Special Concern (Passerines)	**BR-1, BR-2, BR-3, BR-4, BR-7,** and **BR-12** will be implemented.	LS
Potential impacts to foraging or transient bird Species of Special Concern (Raptors)	**BR-1, BR-2, BR-3, BR-4, BR-7, BR-12, and BR-19** will be implemented.	LS
Potential impact to special-status mammals (Excluding Bats)	**BR-1, BR-2, BR-3, BR-4, BR-7, BR-12,** and **BR-19** will be implemented.	LS
Potential impact to special-status mammals (Bats)	**BR-2, BR-3, BR-4, BR-7, BR-12,** and **BR-18** will be implemented. **BR-20:** In habitats where roosting bats may occur, ground disturbance and roost destruction shall be avoided during the parturition period (generally March through August). Where this is not feasible, exit surveys and/or roost surveys of potential roost sites shall occur to identify active roosts. Construction activity within 300 feet of active roosts shall be prohibited until the completion of parturition (end of August); unless it can be demonstrated through biological monitoring that the construction activity is not affecting the active roost. Alternatively, if potential roosts are identified prior to onset of parturition, with concurrence from CDFW, roosts may be excluded during the evening forage period (within 4 hours after dark) or fitted with one-way exit doors to effectively eliminate and exclude roost.	LS
Potential impact to special-status fish	**BR-7, BR-9, BR-10, BR-11, and BR-12** will be implemented.	LS
Potential impact wildlife movement corridors	**BR-1, BR-7, BR-8, BR-9, BR-10, BR-11, BR-17,** and **BR-19** will be implemented.	LS
Potential impacts under local policies or ordinances	**BR-3, BR-8, BR-9, BR-10, BR-11,** and **BR-12** will be implemented.	LS
Potential impacts through conflicts with Habitat Conservation Plans or other conservation plans	**BR-3, BR-8, BR-9, BR-10,** and **BR-11** will be implemented.	LS

TABLE ES-1
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation	Level of Significance after Mitigation
Potential impacts to protected oak trees	**BR-21:** For unavoidable impacts to qualifying oak trees, an oak tree permit application would be submitted to the LADRP. All permit terms and conditions would be complied with from the final permit issuance. A mitigation area and plan for oak mitigation will be submitted to LADRP and approved before award of any grading permit for the Project. The site will be assessed for oak woodlands according to the County Oak Woodland Conservation and Management Plan, and a mitigation plan for oak woodland impacts will be submitted for review and approval by LADRP. As appropriate, potential impacts to oak woodlands will be mitigated by planting understory plants in the same area identified onsite for mitigation oaks pursuant to the Oak Tree Permit for the Project.	LS
Cultural Resources		
Potential impacts to Bowers Cave (CA-LAN-36)	**CR-1:** A qualified archaeologist will flag off the area around Bowers Cave and establish a buffer in consultation with the Permittee to ensure avoidance of grading of the cave site. Grading plans will clearly depict the sensitive area and state that grading must not occur beyond the established buffer. The qualified archeologist will monitor earth-moving activities that would occur within 100 feet of the established buffer. **CR-2:** Prior to the start of monitoring activities, a Cultural Resources Monitoring Plan (CRMP) will be developed. The CRMP will include, at a minimum: 1) the location of areas to be monitored, 2) frequency of monitoring, 3) description of resources expected to be encountered, 4) description of circumstances that would result in a construction halt, 5) description of monitoring reporting requirements, and 6) disposition of found/collected materials. **CR-3:** Native American consultation has indicated that Bowers Cave and the surrounding region may be important to local Native Americans, specifically Tataviam. Provisions will be made to provide cave access to interested Tataviam, and Tataviam will have the option to provide a construction oversight monitor during ground-disturbing activities. The Tataviam monitor will act as a liaison between archaeologists, the permitee, contractors, and public agencies to ensure that cultural features are treated appropriately from the Tataviam point of view. All artifacts that may be found will be returned to the Tataviam or reinterred into the earth.	LS
Potential for the accidental discovery of buried cultural resources during ground-disturbing activities	**CR-1** through **CR-3** will be implemented.	LS
Potential for the accidental discovery of buried paleontological resources during ground-disturbing activities (Upper Pico Formation and Saugus Formation)	**CR-4:** Prior to construction, the services of a qualified vertebrate paleontologist shall be retained to develop and implement a Paleontological Resources Mitigation Plan prior to earth moving activities. The Plan will include the following elements: • development of agreement with a recognized museum repository; • identification of final disposition, permanent storage, and maintenance of any fossil remains and associated specimen data and corresponding geologic and geographic site data that might be recovered; and • determination of level of treatment (preparation, curation, cataloguing) of the remains that would be required before the mitigation program fossil collection would be accepted for storage. **CR-5:** The paleontologist and/or monitor shall conduct a preconstruction survey of the project site prior to the start of any earth moving associated with the landfill expansion. **CR-6:** The paleontologist or monitor shall coordinate with landfill personnel to provide information regarding regulatory agency requirements for the protection of paleontological resources. Landfill personnel also will be briefed on procedures to be followed in the event that a fossil site or fossil occurrence is encountered during construction, particularly when the monitor is not onsite. The briefing will be presented to new landfill personnel as necessary. Names and telephone numbers of the monitor and other appropriate mitigation program personnel shall be provided to the landfill manager. **CR-7:** Earth-moving activities shall be monitored by the paleontologist only in those areas of the project site where these activities would disturb previously undisturbed strata in the Saugus and upper Pico Formations (not in areas underlain by artificial fill or younger alluvium). With concurrence from the project paleontologist, if no fossil remains are found once 50 percent of earth moving has been completed in an area underlain by a particular rock unit, monitoring can be reduced or suspended in that area. **CR-8:** All diagnostic fossil specimens recovered from the project site shall be treated (prepared, curated, catalogued) in accordance with designated museum repository requirements. **CR-9:** The monitor shall maintain daily monitoring logs. A final technical report of results and findings shall be prepared by the paleontologist and included with the material submitted for curation (see above).	LS

TABLE ES-1
Summary of Project Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation	Level of Significance after Mitigation
Traffic and Transportation		
Exceed LOS standard established by the regulatory agency	The Proposed Project will have a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. The intersection of Commerce Center Drive and SR-126 will be under construction in 2015 as part of the Commerce Center Drive/SR-126 improvement project. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection will return operations to LOS D or better during both peak hours. Therefore, no mitigation is required of the CCL project since mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project.	
Greenhouse Gas Emissions and Climate Change		
Potential to generate GHG emissions, either directly or indirectly that would have a significant impact on the environment	**GHG-1:** The CARB interim performance standards will be implemented and include the following: • Idling of heavy duty hauling trucks off-road mobile sources of any type in excess of 5 minutes, will be prohibited. • When new landfill equipment is purchased, new commercially available equipment will be purchased that meets or exceeds California's emission standards in effect at the time of purchase. • Onsite vehicles and equipment will be properly maintained per manufacturer's specifications. **GHG-2:** Within 3 years of project approval, the applicant will submit a GHG Reduction Plan. **GHG-3:** The smallest equipment possible will be used for operations at the landfill to minimize tailpipe exhaust emissions. **GHG-4:** Energy conservation practices will be followed, including turning off all unnecessary lights.	LS
Potential to conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs	**GHG-1** through **GHG-4** will be implemented.	LS

Notes:
LS = Less than Significant After Mitigation

CHAPTER 1.0

Introduction

1.1 Project Background

The Chiquita Canyon Landfill (CCL) is an existing Class III (municipal solid waste) facility located in northwestern Los Angeles County near the City of Santa Clarita, just west of the Interstate 5 (I-5) and State Route 126 (SR-126) junction (Figure 1-1). The site is a total of 639 acres, with an existing permitted waste footprint of approximately 257 acres, although not all of the 257 acres has been developed.

CCL was previously owned by the Newhall Land and Farming Company (NLF) and, prior to 1999, was operated by Laidlaw Waste Systems, Inc. under a lease agreement with NLF. CCL came under management of Republic Services, Inc. in 1999 and was subsequently purchased by Republic Services, Inc. in 2001. In 2009, CCL was purchased by Waste Connections, Inc. (Waste Connections); Waste Connections currently owns and operates the landfill.

Landfill operations at CCL were first permitted by the County of Los Angeles under Conditional Use Permit (CUP) No. 1809-5, issued on November 24, 1982, which expired in November 1997. The current CUP No. 89-051(5), which was approved in 1997, is for the permitted landfill area of 257 acres and a maximum daily permitted disposal of 6,000 tons per day. The current CUP closure date is 2019, but based on the current CUP tonnage limits, the projected closure date is between 2015 and 2019. The amount of waste delivered to CCL has generally been near the maximum allowed under the current permit, although there has been a decrease in recent years due to the sluggish economy. The currently permitted landfill consists of three fill areas: Primary Canyon, Canyon B, and Main Canyon. Primary Canyon and Canyon B stopped receiving waste in 1988 and 1989, respectively. Main Canyon, which includes Canyons A, C, and D and Modules 1 through 13, will be closed in phases as significant portions of the landfill reach final grade. The existing permitted fill areas are shown in Figure 1-2.

Waste Connections has applied for a new CUP to implement the CCL Master Plan Revision (Proposed Project). The Proposed Project will:

- Extend the waste footprint at CCL by approximately 143 acres within the existing site boundary
- Develop a new site entrance and support facilities
- Raise the maximum elevation
- Increase the disposal rate and volume
- Better utilize the landfill's remaining and potential disposal capacity
- Allow for the disposal of all nonhazardous wastes acceptable at a Class III solid waste disposal landfill
- Allow for a mixed organics composting operation
- Develop a Household Hazardous Waste Facility (HHWF)
- Create a land set-aside for a future potential conversion technology facility

Landfill operations would also include the continued diversion of such materials as green waste, asphalt, concrete, and metal.

1.1.1 Historical Waste Quantities

CCL receives waste from the Santa Clarita Valley, including Val Verde, Castaic, Santa Clarita, and the surrounding unincorporated county; the northern San Fernando Valley; the greater Los Angeles Basin via various transfer stations; and a limited area of Ventura County. In general, there are no geographic constraints on the sources of waste.

The amount of waste delivered to CCL has generally been near the maximum allowed under the current permit (1.56 million tons per year); although there has been a decrease in recent years due to the sluggish economy. The historical disposal tonnage is presented in Table 1-1.

TABLE 1-1
Historical Disposal Tonnage

Year	Disposal Tons
1998	1,134,618
1999	1,294,917
2000	1,374,579
2001	1,412,339
2002	1,490,961
2003	1,541,282
2004	1,558,355
2005	1,549,088
2006	1,538,969
2007	1,543,138
2008	1,504,592
2009	687,714
2010	1,089,797
2011	1,330,312
2012	926,866
2013	1,029,326

In 2013, 66 percent, by weight, of the solid waste disposed at CCL originated from transfer stations. The remaining 34 percent of solid waste disposed was delivered to CCL by commercial direct-haul trash collection trucks and the general public. The 2013 CCL disposal tonnage is shown in Table 1-2.

TABLE 1-2
Summary of 2013 Incoming Waste Tonnage

	Disposal				
Month	Transfer Stations (tons)	Direct Haul (tons)	Total (tons)	Diverted for Beneficial Use (tons)	Total Received (tons)
January	50,775	34,145	84,920	58,499	143,419
February	43,375	27,936	71,311	61,522	132,833
March	47,764	27,360	75,124	68,320	143,444
April	51,154	28,494	79,648	58,183	137,831
May	55,651	36,102	91,753	45,496	137,249
June	49,461	28,777	78,238	46,020	124,258
July	57,242	32,170	89,412	48,256	137,668
August	55,903	29,432	85,335	76,057	161,392
September	52,009	26,546	78,555	50,718	129,273
October	60,393	30,043	90,436	48,644	139,080
November	79,412	26,289	105,701	47,187	152,888
December	72,374	26,519	98,893	43,670	142,563
Total	**675,513**	**353,813**	**1,029,326**	**652,572**	**1,681,898**
Percentage of Waste Disposed	66%	34%	100%		
Percentage of Total Incoming Waste			61%	39%	100%

N

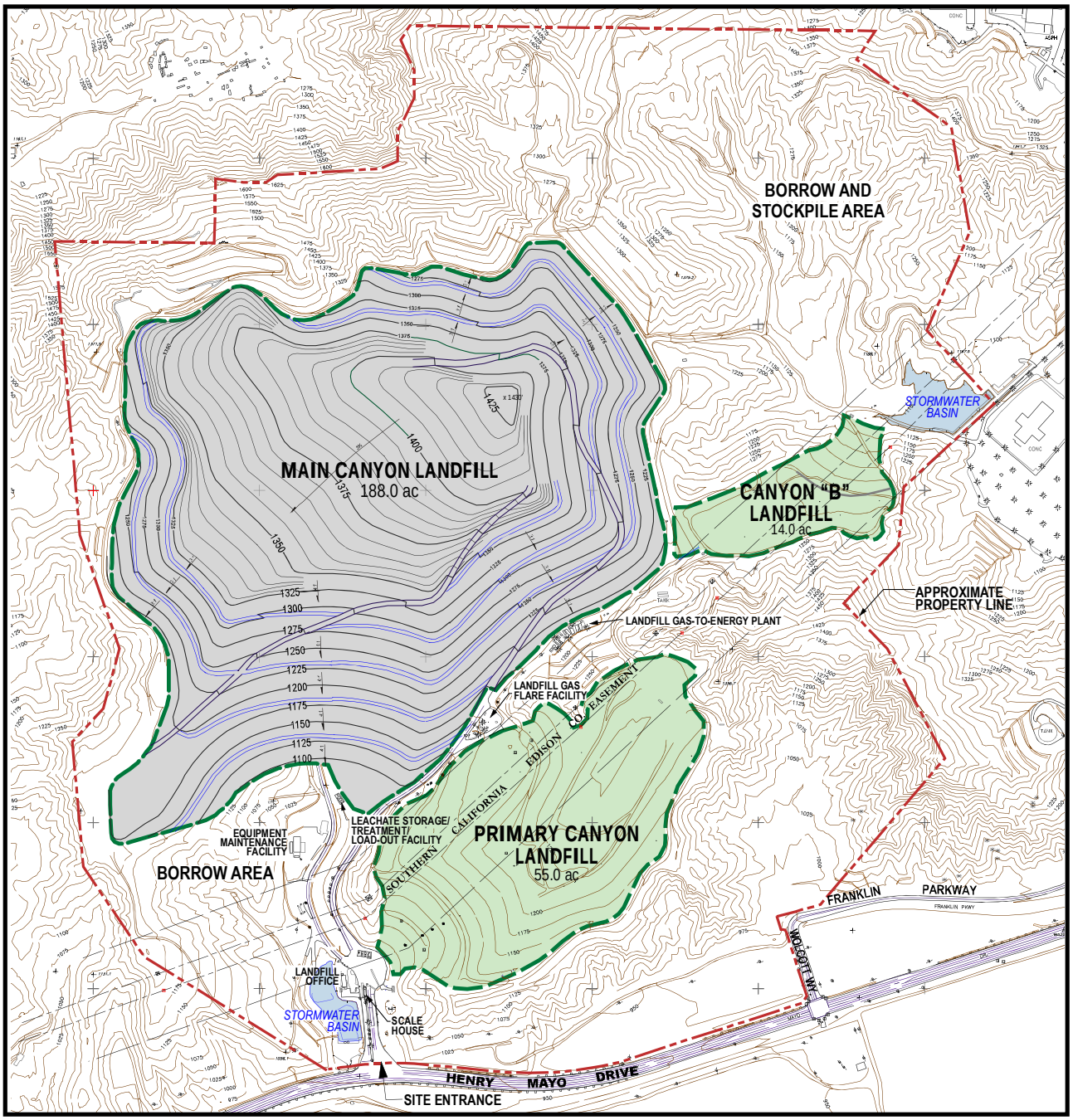
0 5 10
Miles

Source: Thomas Guide, California Road Atlas, 22nd Edition, 2004.

FIGURE 1-1
Regional Location Map
Chiquita Canyon Landfill
Master Plan Revision

ES092311093436SCO417064.11.05 CCL_reg_location.ai 11/11

CH2MHILL



LEGEND

- LIMIT OF PERMITTED LANDFILL
- ACTIVE PERMITTED LANDFILL AREA
- CLOSED PERMITTED LANDFILL AREA

N

0 400 800
Feet

FIGURE 1-2
Permitted Landfill
Chiquita Canyon Landfill
Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2013

CH2MHILL

Because management of solid waste in Los Angeles County is characterized by several disposal facilities serving a large metropolitan area, as opposed to one major facility serving a specific city or county area, there can be major variances in the source of wastes and the tonnage received at CCL. Contributing factors include closures at other landfills, changes in disposal fees, or other circumstances not controlled by CCL. Thus, market factors (i.e., supply and demand; disposal pricing) largely dictate where the waste disposed at CCL originates.

As shown in Tables 1-1 and 1-2, during 2013, 1,029,326 tons of waste were disposed at CCL. In addition to the waste disposed, CCL diverts additional waste material received at the landfill from disposal and utilizes it for beneficial uses, including but not limited to alternative daily cover, road construction, dust control, and erosion control. During 2013, 652,572 tons were diverted from disposal, which represents approximately39 percent of the total incoming waste.

1.1.2 Existing Conditional Use Permit

The current CUP contains three separate and distinct conditions that control disposal capacity of the landfill:

- The final grading plan (maximum elevation of 1,430 feet) as shown on Exhibit A of the CUP (CUP Conditions 5 and 9b)
- 23-million-ton disposal limit (CUP Condition 46)
- Closure date of November 24, 2019 (CUP Conditions 5 and 46)

Based on the CUP disposal tonnage limit, the remaining permitted disposal tonnage is approximately 4.9 million tons, as of January 2012. The CUP disposal tonnage limit will be reached before the final grades shown on Exhibit A are reached, resulting in approximately 16.7 million tons of unused disposal capacity.

The CUP limits the landfill disposal rate to a maximum of 30,000 tons per week (CUP Condition 9d) and 6,000 tons per day (CUP Condition 9e). The waste tonnage disposed has varied from the maximum permitted weekly tonnage to much less depending on various factors, including the economy. Depending on the waste quantity received, the landfill is expected to close between 2015 and 2019. The CUP allows the landfill to operate 24 hours per day, 6 days per week (CUP Condition 9h).

The previous landfill expansion, originally proposed in 1989 included developing an East Canyon area previously referred to as Fill Modules 8 and 9. As a result of the disposal tonnage limit included in the CUP, Fill Modules 8 and 9 were deleted from the proposed grading plan. Additionally, the landfill footprint was pulled back north of the entrance area. The approved final grading plan, included with the CUP as Exhibit A, does not include the originally proposed Fill Modules 8 and 9, but does include language noting that nothing prohibits proposing a future landfill expansion (CUP Condition 9c). Therefore, the Proposed Project is consistent with the anticipated expansion identified in the CUP, and the Proposed Project is necessary to maximize the amount of waste that can be placed within the landfill.

1.2 Project Purpose and Objectives

The purpose of the Proposed Project is to provide additional disposal capacity through continued operation of CCL to help meet the critical solid waste management needs of Los Angeles County. Development of additional economically viable disposal capacity in a reasonable timeframe is of vital importance to meet the current and anticipated needs for the Santa Clarita Valley and the greater Los Angeles area, as existing landfills reach capacity and close. The Proposed Project will capitalize on the unique opportunity to utilize the existing CCL facility to achieve the development of additional disposal capacity.

The primary objectives of the Proposed Project are:

- To help meet the interim disposal needs of the Santa Clarita Valley and greater Los Angeles area, and to postpone or prevent a shortage of cost-effective local disposal capacity projected to occur in the future (e.g., Los Angeles County Department of Public Works [LACDPW], 2013)

- To provide environmentally sound, safe, and cost-effective disposal capacity through continued operation and development of the existing CCL facility; prevent premature closure of the landfill with underutilized remaining permitted airspace capacity; and avoid potential rail transportation impacts
- To continue to provide landfill waste diversion programs that are relied upon by many local cities and communities in achieving state-mandated goals

1.3 Project Need

The LACDPW estimated the solid waste disposal quantity for Los Angeles County was 8,612,083 tons in 2012. Of this amount 6,239,143 tons was disposed at Class III landfills in the County and 528,725 tons was disposed at transformation facilities in the County. Countywide, the diversion rate for this quantity of solid waste was estimated at 60 percent. The estimated waste exported to out-of-county landfills was 1,844,175 tons. At the end of 2012, the total remaining permitted Class III landfill capacity in the County was estimated at 129.2 million tons. By the end of the year 2026, the Class III landfill capacity is estimated at 134 million tons, resulting in a potential deficiency of approximately 5 million tons (LACDPW, 2013).

In addition to the proposed extension of CCL, other potential extensions in Los Angeles County include the Whittier (Savage Canyon) Landfill Expansion and the Scholl Canyon Landfill Expansion. In 2013, LACDPW conducted an analysis evaluating nine potential scenarios to help the County determine how to maintain adequate solid waste disposal capacity from 2013 to 2026. The analysis included the following scenarios: (1) status quo scenario; (2) increase in diversion rate; (3) utilization of alternative technology capacity; (4) in-County Class III landfill expansions with out-of-County disposal capacity; (5) increase in available out-of-County disposal capacity; (6) maximizing diversion rate; (7) increase in alternative technology capacity; (8) full utilization of out-of-County disposal capacity; and (9) full utilization of our-of-County disposal capacity. Out of the nine scenarios conducted, the first three (1-3) resulted in a disposal capacity shortfall during the planning period. The remaining six scenarios (4-9) were determined to avert a disposal capacity shortfall during the planning period Scenarios 4 through 9 all include expanding existing landfill in the County. LACDPW concluded that “without expanding existing landfills in the County, available disposal capacity would be inadequate to meet the Daily Disposal Demand of all 88 cities and the unincorporated County areas” and would result in a disposal capacity shortfall before the end of the 15-year study period (LACDPW, 2013).

1.4 Environmental Review Process

1.4.1 Intended Uses of the DEIR

The *California Environmental Quality Act (CEQA) Guidelines* require that state and local government agencies, as well as special districts, consider the environmental consequences of projects over which they have discretionary authority before taking action on them. For proposed projects that may have potential significant adverse environmental effects, an Environmental Impact Report (EIR) must be prepared. This Draft EIR (DEIR) has been prepared in accordance with the *CEQA Guidelines* for the implementation of CEQA published by the Resources Agency of the State of California (*California Code of Regulations*, Title 14, Division 6, Chapter 3, Sections 15000-15387 and Appendices A-K).

The DEIR will be used by various local and state agencies in their consideration of actions required to: (1) approve; (2) approve with conditions or modifications; or (3) deny the Proposed Project. This DEIR is intended to provide the public, agencies, and decision makers with a comprehensive analysis of the following:

- Potential environmental consequences of the Proposed Project
- Potential mitigation measures to avoid or significantly lessen environmental impacts that would otherwise be significant
- A reasonable range of alternatives to the Proposed Project

The level of technical detail, evaluation, and analysis provided in this DEIR is consistent with *the CEQA Guidelines d*escribed above and is sufficient to provide an understanding of potential impacts.

1.4.2 Public Scoping Process

The first step of the DEIR preparation was the distribution of the Notice of Preparation (NOP) for the Proposed Project to facilitate scoping. The NOP was sent to responsible public agencies and interested parties. The NOP, released on November 21, 2011, included a summary of the Proposed Project and an invitation to submit comments on the content of the DEIR. A number of responses were received from various agencies.
In addition, comment letters were received from members of the Union de Residentes Para La Proteccion Ambiental de Val Verde and Val Verde Civic Association. The NOP and associated response letters are found in Appendix A. The following agencies/parties responded to the NOP:

- California Department of Fish and Wildlife (CDFW)
- California Department of Resources Recycling and Recovery (CalRecycle)
- County of Los Angeles, Department of Public Works
- County of Los Angeles, Fire Department
- County of Los Angeles, Metropolitan Transportation Authority
- County of Ventura, Air Pollution Control District
- County of Ventura, Public Works Agency, Transportation Department
- County of Ventura, Watershed Protection District
- Native American Heritage Commission
- Santa Clarita Organization for Planning and the Environment (SCOPE)
- Stuart Abramson (resident of Val Verde)
- Nancy Carder (community member)
- Thomas Leeb (resident of Val Verde)
- Raul Lejano (member of Union de Residentes Para La Proteccion Ambiental de Val Verde)
- Marc Salzarulo (resident of Val Verde)
- Scott Wardle (former President of the Castaic Town Council)

1.4.3 Agencies and Interested Parties Consulted

The following agencies/parties were consulted as part of the scoping process:

<u>Federal Agencies</u>

- National Park Service, Santa Monica Mountains National Recreational Area
- Angeles National Forest
- United States Postal Service
- United States Army Corps of Engineers

<u>State Agencies</u>

- California Department of Conservation, Division of Oil, Gas, and Geothermal Resources
- CDFW
- State Lands Commission
- California Department of Parks and Recreation
- California Regional Water Quality Control Board (RWQCB), Los Angeles Region
- Caltrans District 7, Intergovernmental Review/CEQA Coordinator
- California Department of Public Health
- South Coast Air Quality Management District (SCAQMD)
- California Department of Food and Agriculture
- CalRecycle

- Integrated Waste Management, Permitting, and Enforcement Division
- California Department of Water Resources (DWR)

Regional, County, City

- Los Angeles County Clerk
- County of Los Angeles, Environmental Health, Environmental Hygiene Program
- County of Los Angeles, Environmental Health, Solid Waste Management Program
- County of Los Angeles Fire Department, Forestry Division, Prevention Bureau
- County of Los Angeles, Department of Public Works, Land Development Division
- County of Los Angeles, Department of Parks and Recreation, Planning Division
- County of Los Angeles Sanitation Districts
- County of Kern, Planning and Community Development
- Ventura County, Planning Division
- City of Los Angeles, Planning Department
- City of Santa Clarita, Planning Commission
- Southern California Association of Governments
- Metropolitan Transit Authority, County Wide Planning

Interested Parties

- Rosemary Woodlock, Save Open Space
- Santa Clarita Civic Association
- SCOPE
- Santa Clarita Oak Conservancy
- Sierra Club
- United Water Conservation District
- California Native Plant Society
- Castaic Area Town Council
- Castaic Lake Water Agency
- Valencia Water Company
- Castaic Chamber of Commerce
- Friends of the Santa Clara River
- Val Verde Community Benefits Funding Committee
- Communities for a Better Environment
- Union de Residentes Para La Proteccion Ambiental de Val Verde
- Val Verde Civic Association
- Val Verde Community Advisory Committee
- Santa Clarita Civic Association

1.4.4 Circulation of the DEIR

Upon completion, this DEIR was submitted to the State Clearinghouse for distribution to interested state agencies and circulated for public review and comment. Written comments will be accepted and verbal comments will be received at public hearings held by the Los Angeles County Department of Regional Planning (LADRP). Per the requirements of CEQA, responses will be prepared for all comments received on the DEIR. A Final EIR will be prepared, which will include responses to comments received on the DEIR as well as any changes to the DEIR necessitated by the comments themselves. The Final EIR will be considered for certification by LADRP. Thereafter, the certified Final EIR will be used by agencies in permitting the Proposed Project.

1.5 Project Approvals

1.5.1 Regulatory Compliance – Framework for Class III Landfills

Class III landfills in California are regulated on multiple jurisdictional levels by local, state, and federal agencies. Compliance with the regulations of each of these agencies is necessary for the approval of the proposed landfill extension and/or monitoring the operation and closure of the facility. Local regulatory enforcement is performed by the Los Angeles County Department of Public Health, also known as the local enforcement agency (LEA); RWQCB, Los Angeles Region; the Los Angeles County Solid Waste Management Committee/ Integrated Waste Management District; and the South Coast Air Quality Management District (SCAQMD). Each of these local agencies is involved in issuing permits that condition the operation and/or closure of the landfill.

The California Integrated Waste Management Act (IWMA) of 1989 (Assembly Bill [AB] 939) requires counties to prepare a Countywide Integrated Waste Management Plan (CIWMP) and mandates a minimum 50 percent volume reduction in solid waste being landfilled by 2000. Compliance with the IWMA is the responsibility of local jurisdictions. Later legislation mandates the 50 percent diversion requirement be achieved every year (CalRecycle, 2012).

Even with achievement of a 50 percent reduction in landfilled waste, the California legislature recognized that additional landfill capacity is required. Thus, the IWMA also requires counties to secure long-term (15 years) disposal capacity for waste that cannot be diverted. To conserve critical landfill space, it is CalRecycle policy to maximize the use of existing landfills, where feasible and environmentally acceptable.

The IWMA also requires development of countywide siting elements and solid waste facility components as part of the CIWMP to assure that locations exist for environmentally safe transformation and disposal facilities for waste that cannot feasibly be reduced, recycled, or composted. Availability of waste disposal capacity, however, does not relieve local jurisdictions from their responsibility for source reduction required by the IWMA.

Solid waste management in Los Angeles County is regional in nature and is guided by local policy carried out in accordance with federal, state, and local statutory and regulatory requirements.

1.5.2 Federal, State, and Local Approvals

Table 1-3 identifies permits and approvals that may be applicable to the Proposed Project. Many of these permits apply to the existing CCL and may need to be amended for implementation of the Proposed Project. Although a number of agencies are identified, discussions with those agencies will be required to determine the specific nature of any future permits or approvals that may be required from those agencies. Their inclusion in this document is intended to acknowledge the possible role of those agencies and ensure their notification. In addition, reference to these agencies is intended to provide them and the public with an environmental basis under *CEQA Guidelines* to facilitate the dissemination of information deemed necessary to the discretionary approvals process and the approval or conditional approval of any aspect of the Proposed Project within their jurisdiction.

TABLE 1-3
Project Permits and Approvals

Agency	Permit or Approval
Federal	
United States Department of Commerce	National Type Evaluation Program Certificate of Conformance
State	
State of California Department of Food and Agriculture	Certificate of Approval for Weighing Devices
State of California Industrial Relations	Air Pressure Tank Permit
State Water Resources Control Board	Stormwater Discharge Permit
CDFW	Agreement Regarding Proposed Lake or Streambed Alteration
RWQCB	Waste Discharge Requirements
California Department of Food and Agriculture	Weighmaster License
CalRecycle	Solid Waste Facilities Permit
Local	
RWQCB, Los Angeles Region	Conditional Certification – Sedimentation Basin #1
SCAQMD	Permit to Construct/Operate a Landfill Condensate and Leachate Collection incorporated in Title V
	Permit to Construct/Operate a Landfill Gas Collection System incorporated in Title V
	Permit to Construct/Operate a Landfill Gas Flare incorporated in Title V
	Title V Permit (incorporates all previous SCAQMD permits)
	Rule 431.1 Alternative Monitoring Plan for CCL

1.5.3 County of Los Angeles Approvals

The following County of Los Angeles permits and approvals may be applicable to the Proposed Project.

<u>County of Los Angeles</u>

- Above and/or Below Ground Tank Permits
- Waste Disposal Facility Business License Tax Registration Certificate
- Weights and Measures Registration Permit
- CUP
- Waste Plan Conformance
- Solid Waste Facilities Permit

<u>Los Angeles County Department of Public Works</u>

- Industrial Waste Disposal Permit – Leachate and Condensate
- Industrial Waste Disposal Permit – Wash Pad Water

<u>Los Angeles County Fire Department</u>

- Los Angeles County Certified Unified Program Agency
- Consolidated Unified Program Los Angeles County Fire Department

1.6 DEIR Content and Organization

The DEIR is organized into the following chapters:

- **Executive Summary.** The Executive Summary provides a brief summary of the Proposed Project purpose, description, major findings, and conclusions; it also includes a summary of Proposed Project impacts and mitigation.
- **Chapter 1.0, Introduction.** This chapter provides an overview of the Project background, purpose, objectives, and need; intended uses of the DEIR; the public scoping process and circulation of the DEIR; project approvals; and presents the general content and organization of the DEIR.
- **Chapter 2.0, Project Description.** This chapter describes the Proposed Project location and existing surrounding land uses and provides a detailed description of the Proposed Project, including the proposed facilities, lateral extension, increased elevation and disposal limits, wastes to be received, operation, design features, environmental monitoring, and ancillary uses. This chapter also addresses landfill closure and post-closure plans.
- **Chapter 3.0, General Setting and Resource Area Analysis.** This chapter discusses the general setting; the existing and approved CCL facilities; the organization and general content of the resource area chapters; and a discussion of reasonably foreseeable projects in the vicinity for which cumulative impacts were evaluated.
- **Chapter 4.0 through 16.0, Resource Area Analysis.** Chapters 4.0 through 16.0 discuss the following resource areas of concern. Each chapter above includes an introduction; description of the methodology; description of the setting (regulatory and regional); analysis of potential impacts; listing and description of relevant mitigation measures; determination of significance of potential impacts after mitigation; and discussion of potential cumulative impacts.
  - Chapter 4.0, Land Use
  - Chapter 5.0, Geology and Hydrogeology
  - Chapter 6.0, Surface Water Drainage
  - Chapter 7.0, Water Quality
  - Chapter 8.0, Biological Resources
  - Chapter 9.0, Cultural and Paleontological Resources
  - Chapter 10.0, Traffic and Transportation
  - Chapter 11.0, Air Quality
  - Chapter 12.0, Greenhouse Gas Emissions and Climate Change
  - Chapter 13.0, Noise
  - Chapter 14.0, Public Services and Utilities
  - Chapter 15.0, Visual Resources
  - Chapter 16.0, Environmental Justice and Socioeconomics
- **Chapter 17.0, Other CEQA-Required Sections.** This chapter includes a discussion of:
  - Unavoidable impacts of the Proposed Project
  - Significant irreversible environmental changes
  - Growth-inducing impacts of the Proposed Project
  - Effects found not to be significant
- **Chapter 18.0, Project Alternatives.** This chapter contains a reasonable range of alternatives to the Proposed Project, including the No Project Alternative. Each alternative is analyzed for feasibility, its ability to achieve the Proposed Project objectives, and its ability to potentially avoid or substantially lessen significant environmental impacts associated with the Proposed Project.

- **Chapter 19.0, Organizations and Persons Consulted.** This chapter lists all organizations and individuals consulted for their expertise during the preparation of this DEIR.
- **Chapter 20.0, DEIR Preparers and Contributors.** This chapter lists the primary authors and technical specialist for each resource area who contributed to preparation of the DEIR.
- **Chapter 21.0, References and Bibliography.** This chapter lists references and resources used in preparation of the various chapters of the DEIR.
- **Appendixes.** The following appendixes to the DEIR are included:
  - Appendix A: NOP/Initial Study
  - Appendix B: Mitigation Monitoring Plan from the Statewide Anaerobic Digester Facilities for the Treatment of Municipal Organic Solid Waste Program EIR
  - Appendix C: Hydrogeologic Report
  - Appendix D: Geotechnical Investigation
  - Appendix E: Biota and Oak Tree Reports
  - Appendix F: Cultural Resources
  - Appendix G: Traffic Analysis
  - Appendix H: Air Quality
  - Appendix I: Noise
  - Appendix G: Water Supply Assessment
  - Appendix K: LACDPW 2011 Annual Report

CHAPTER 2.0

Project Description

The Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project) is described in detail in this chapter. The location of the Proposed Project is described in Section 2.1. Specific elements of the Proposed Project are addressed in Section 2.2. Section 2.3 addresses landfill closure and post-closure.

2.1 Location

CCL, located in the northwestern portion of unincorporated Los Angeles County, is approximately 3 miles west of the intersection of Interstate 5 (I-5) and State Route 126 (SR-126) (Figure 1-1). The site is located in Section 15, Township 4 North, Range 17 West, San Bernardino Baseline and Meridian. The site latitude and longitude are 34°25'N and -118°39'E, respectively.

CCL is located within the planning area of the City of Santa Clarita, but outside its city limits and sphere of influence. The landfill site is also located within the Santa Clarita Valley Area Plan of the Los Angeles County General Plan and in the Castaic Area Community Standards District.

Much of the area surrounding CCL consists of undeveloped open space as a result of steep topography. Surrounding land uses include primarily open lands to the north and rural residential development to the west and northwest along Chiquito Canyon Road and in the Val Verde area. The closest of these residential dwellings is located approximately 500 feet from the northwest site boundary and 1,200 feet from the landfill footprint, and intervening topography prevents residential views of the operating landfill from these locations. The United States Postal Service has a general mail facility adjacent to the eastern edge of the landfill property boundary. The property immediately west and south of the landfill is owned by the Newhall Land and Farming Company (NLF) and is currently either vacant or used for agricultural activities.

Limited suburban residential areas are located further to the northeast, and industrial/commercial uses are also located further to the northeast, east, and southeast. Oil extraction fields and associated storage areas are located less than 1 mile from the landfill to the west and south. Valencia Travel Village, a short- and long-term recreational vehicle resort, is located approximately 1 mile east of the landfill on the south side of SR-126.

2.2 Project Elements

The Proposed Project includes the following elements: development of new entrance and support facilities; better utilization of the landfill's potential disposal capacity through a lateral extension of the existing waste footprint and increased maximum elevation; increased daily disposal limits; acceptance of all nonhazardous wastes permitted at a Class III solid waste disposal landfill; continued operation of the landfill; new design features; environmental monitoring; development of a Household Hazardous Waste Facility (HHWF); mixed organics composting operation; and set-aside of land for potential future conversion technology. In addition, the Proposed Project includes the relocation of a portion of Southern California Edison's (SCE) existing Saugus-Elizabeth Lake-Fillmore 66 kilovolt (kV) Subtransmission Line in order to accommodate landfill improvements. Each of these project elements is described in detail below.

2.2.1 Entrance and Support Facilities

CCL is located on the north side of SR-126, a four-lane paved highway running east-west along the southern boundary of CCL. As part of the Proposed Project, the primary landfill entrance will be located at Wolcott Way, as shown in Figure 2-1. Vehicles traveling to the site will turn from SR-126 onto Wolcott Way, which is a signalized intersection, and then west into the new landfill entrance. The new entrance location will provide a safe entrance and exit from the landfill.

Access to the site will be controlled by a gate located at the entrance, along with a video surveillance system for security. In addition to the access gate, existing (and proposed) perimeter fencing prevents unauthorized

access and warning signs are attached to the fencing. The terrain and location of the site limits its accessibility to unauthorized entry from areas other than the SR-126 entrance. Security fencing between the landfill and the adjacent United States Postal Service facility prevents access to the landfill from the postal facility and vice versa.

Signage similar to the existing signs will be provided, identifying the facility, hours of operations, tipping fees, and notification of unacceptable wastes. The signs will continue to provide appropriate contact information for relevant permitting agencies.

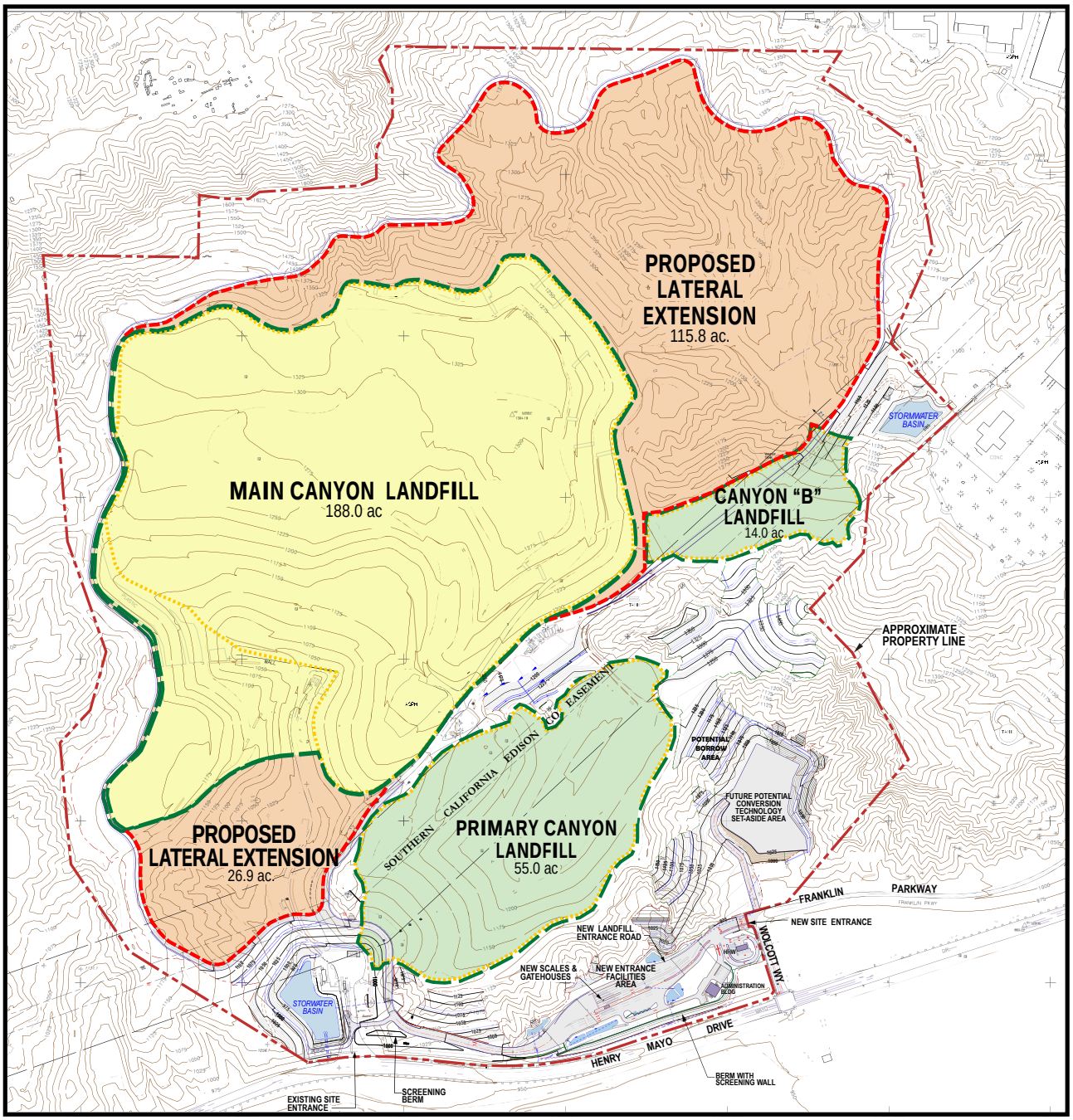
Once through the gate, vehicles will enter the facility via a new entrance road to reach the scale house and administrative offices, as shown in Figure 2-1. The new entrance road will extend west from Wolcott Way and will provide additional onsite queuing space for landfill customers—more than 1,000 feet of multi-lane queuing (compared to the existing 400 feet of queuing length) to ensure that vehicles are able to queue onsite. The new entrance will include administration buildings, a scale house, scales, and parking. A combination of landscaped screening berm and screening wall along the perimeter of the entrance facilities will screen views from SR-126 and Wolcott Way.

The area along Wolcott Way between SR-126 and the site entrance will require street lighting. The light fixtures installed here will meet County standards and will be similar in design and appearance to lighting along SR-126 and at nearby commercial developments. This lighting will have full cutoff design and will be directed to the roadway. Lighting for the new entrance facilities will be limited, consisting of several low wattage fixtures on the administration building; pole lights and low wattage fixtures at the scale house; and pole lights and low wattage fixtures at the shop area. All of these fixtures would be fully shielded and designed to direct the light downward and limit illumination to only the areas where the light is needed. Other than the street lights at the site entrance, light fixtures and lights are anticipated to be shielded from view by the berm and landscaping that will be installed along the eastern and southern sides of the entrance area. While CCL is not within the boundary of the Los Angeles County Rural Outdoor Lighting District, lighting will be designed to be consistent with the lighting provisions of the County ordinance, as feasible.

The entrance will include four inbound scales and two outbound scales. The scale house will continue to serve as an initial waste-control screening point and as a fee and waste stream data collection point (e.g., tonnage, customer, and jurisdictional generator). The method of processing vehicles at the scales will remain the same as the current process. Attendants at the scale house monitor incoming and outgoing traffic. Trucks wait in front of the scale until signaled to pull onto the scale. Trucks are weighed and the drivers sign a weigh ticket before proceeding. Non-waste-hauling vehicles may use a bypass lane to enter the site, if there are trucks on or waiting for the scales. After processing at the scale house, vehicles proceed on a paved access road to the perimeter of the existing landfill. From there, vehicles will be directed to the active disposal area.

Speed bumps along the access road limit vehicle speeds, which keeps people safe and controls dust. “Rumble strips” along the outbound lanes of the access road help remove dirt and mud from exiting vehicles, minimizing dirt and mud being tracked onto Wolcott Way. The rumble strips also limit vehicle speeds as vehicles leave the site. Vehicles that do not have tare weights on file are required to stop to be weighed at the exit scale before leaving the site.

The California Department of Transportation (Caltrans) is proposing to widen SR-126 from four lanes to eight lanes. The entrance facility layout takes into account the widening based on currently available information from Caltrans. As Caltrans continues to refine the SR-126 widening design, it may be necessary to modify the entrance facility design. For example, a wall may replace the screening berm along the site frontage due to space constraints.



LEGEND

- LIMIT OF EXISTING LANDFILL (4/6/10)
- LIMIT OF PERMITTED LANDFILL
- PROPOSED PROJECT LIMIT OF EXTENSION
- CLOSED LANDFILL AREA
- PERMITTED LANDFILL AREA
- PROPOSED LATERAL EXTENSION

N

0 400 800
Feet

FIGURE 2-1
Existing and Proposed Landfill Footprint
Chiquita Canyon Landfill Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2014

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CH2MHILL

SCE's existing Saugus-Elizabeth Lake-Fillmore 66 kV Subtransmission Line currently runs parallel to SR-126 near CCL in an existing easement that is set back in locations ranging from approximately 100 to 300 feet north of SR-126. In order to accommodate the Proposed Project, CCL has requested SCE to relocate an approximately 3,260-foot portion of the 66 kV line between the east side of Wolcott Way to a location approximately 880 feet west of the current CCL entrance. The current and proposed locations of the 66 kV line is shown in Figure 2-2. The portion of the existing 66 kV line to be relocated consists of approximately 7 wood poles and approximately 2 wood "H-frame" structures, which range in height between 70 and 100 feet. The 66 kV line will be relocated approximately 300 feet to the north of the existing 66 kV line into a new easement to be provided by CCL. SCE anticipates that the relocated 66 kV line will consist of approximately eight to ten new lightweight steel and/or tubular steel poles, which will range in height between 70 and 110 feet, and that the length of the relocated line will be approximately 3,700 feet.

2.2.2 Lateral Extension of the Waste Footprint and Increased Maximum Elevation

The Proposed Project will increase the permitted waste footprint within the existing property line by approximately 143 acres by extending it slightly south toward the existing landfill entrance and to the north and east (Figure 2-1). The waste footprint will increase from the currently permitted acreage, approximately 257 acres, to approximately 400 acres. The Proposed Project also will increase the permitted height of the landfill by 133 feet to a maximum elevation of 1,573 feet. The final grading plan and the excavation plan for the Proposed Project are shown in Figures 2-3 and 2-4 and described in further detail in Section 2.2.6.3. Figure 2-5 depicts the proposed limit of disturbance, limit of earthwork, and limit of landfill.

Table 2-1 shows the estimated site capacity and earthwork for the Proposed Project.

TABLE 2-1
Estimated Proposed Project Site Capacity and Earthwork

	Proposed Project[a]
Capacity	
Air Space (Cubic Yards)	72,941,000
Estimated Additional Site Life (Years)	21-38[b]
Final Elevation	1,573 feet
Earthwork (Cubic Yards)	
Daily and Intermediate Cover[c]	6,785,000
Final Cover[d]	789,000
Liner[e]	494,000
Earthfills	2,374,000
Project Earthwork Total (Cubic Yards)	10,442,000
Excavation (Cubic Yards)	9,955,000[f]

[a] Quantities based on a comparison of the permitted final grading plan (CUP Exhibit A) and proposed final grading plan as of May 2013.

[b] Based on the proposed additional capacity and disposal tonnages ranging from the current permitted tonnage of 30,000 tons per week to 60,000 tons per week, assumed to "ramp up" over a 7-year period beginning in January 2016.

[c] Daily and intermediate cover assumes a 9.75-to-1 waste-to-soil ratio and continued use of alternative daily cover.

[d] Assumes an additional 3 feet of cover over the top deck and side slope areas.

[e] Assumes a 2-foot-thick clay low-permeability layer, leachate collection layer on the base, 2-foot-thick operations layer on the base, and a 2-foot-thick operations layer on the side slopes. The soil quantity does not include the 2-foot-thick clay low-permeability layer or leachate collection layer, which are assumed to be imported.

[f] Includes set-aside area, entrance road, and borrow areas outside the landfill footprint.

2.2.3 Disposal Rate and Volume

The Proposed Project will increase daily and weekly disposal tonnage. The permitted maximum daily disposal tonnage will increase from 6,000 to 12,000 tons. As specified in the current conditional use permit (CUP), the "disposal" tonnage refers to the waste disposed only and does not include materials that are diverted from disposal or beneficially re-used. The permitted maximum weekly disposal tonnage will increase from 30,000 to 60,000 tons. This increase in daily and weekly disposal tonnage will allow CCL to be flexible and responsive to the current and anticipated disposal needs of the residents of the Santa Clarita Valley and the greater Los Angeles area. Assuming the maximum disposal rates under the Proposed Project were to begin in 2023, the landfill would reach capacity in approximately 2037 and would commence the closure process at that time. As noted in Table 2-1, this change in tonnage received will not occur all at one time, but rather in response to increased demand over a period of time. The 21-year site life shown in Table 2-1 assumes the disposal rate would "ramp-up" from 30,000 tons per week to 60,000 tons per week over a 7-year period. The actual site life and corresponding closure date is dependent on a number of factors, including the disposal rate actually achieved over time.

CCL proposes to fully utilize the capacity associated with the final grading plan as shown in Figure 2-3. The total airspace available for disposal associated with the final grading plan is approximately 88.9 million cubic yards. Approximately 16 million cubic yards is capacity within the currently permitted final grading plan Exhibit A that will remain when the CUP disposal limit is reached. The Proposed Project will add approximately 72.9 million cubic yards of air space above the current CUP Exhibit A final grading plan.

Consistent with the current CUP, Condition 9i, CCL will continue to operate the landfill in a manner to maximize the quantity of waste placed in the landfill.

2.2.4 Wastes to Be Received

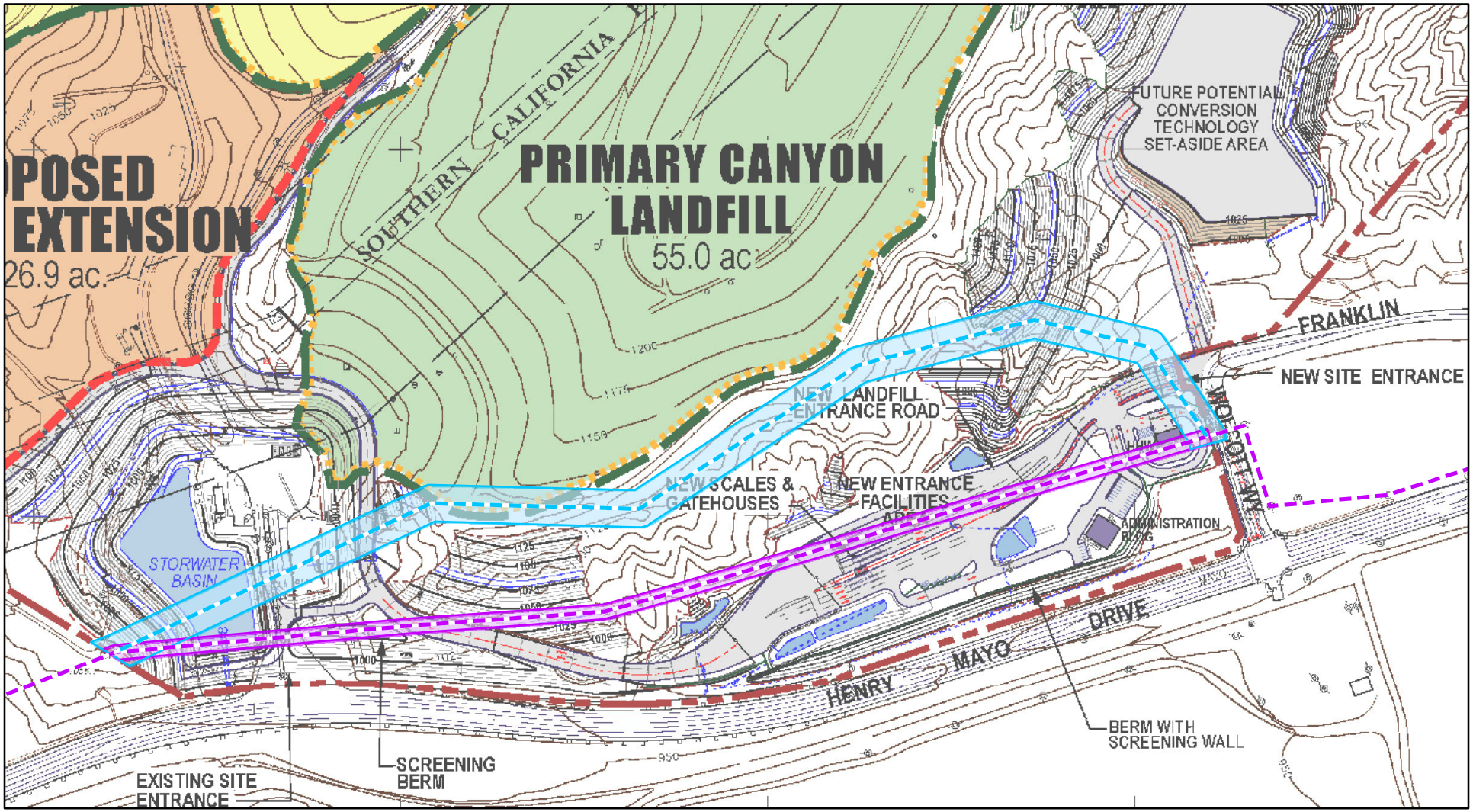
In accordance with 27 CCR Section 20220, Waste Discharge Requirement (WDR) Order No. 98-086, and Solid Waste Facility Permit No. 19-AA-052 for CCL, Class III nonhazardous solid wastes and inert solid wastes are accepted for disposal at CCL. Discharge of nonhazardous contaminated soil and related wastes at CCL is currently permitted under WDR Order No. R4-11-0052.

The definition of nonhazardous solid waste from 27 CCR Section 20220 (also defined in WDR Order No. 98-086) is:

> Nonhazardous solid waste includes all putresible and nonputresible solid, semi-solid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances (except e-wastes), manure, vegetable or animal solid and semi-solid wastes, and other discarded waste (whether of solid and semi-solid consistency); provided such wastes do not contain wastes which must be managed as hazardous wastes, or wastes which contain soluble pollutants in concentrations which exceed applicable water quality objectives or could cause degradation of wastes of the state (i.e., designated waste).

Treated auto shredder waste, if nonhazardous, may also be accepted.

The applicant proposes to accept for disposal all nonhazardous wastes acceptable at a Class III solid waste disposal landfill.



LEGEND

66 kV Subtransmission Line
- Existing
- Proposed

Right-of-Way
- Existing
- Proposed

- Limit of Existing Landfill (4/6/10)
- Limit of Permitted Landfill
- Proposed Project Limit of Extension
- Closed Landfill Area
- Permitted Landfill Area
- Proposed Lateral Extension

Base compiled by photogrammetric methods
by Don Read Corporation, Brea, Ca
Date of Photography: April 6, 2010
Source: Golder Associates, 2014

N

0 200 400
Feet

FIGURE 2-2
Existing and Proposed
SCE 66 kV Subtransmission Line
Chiquita Canyon Landfill
Master Plan Revision

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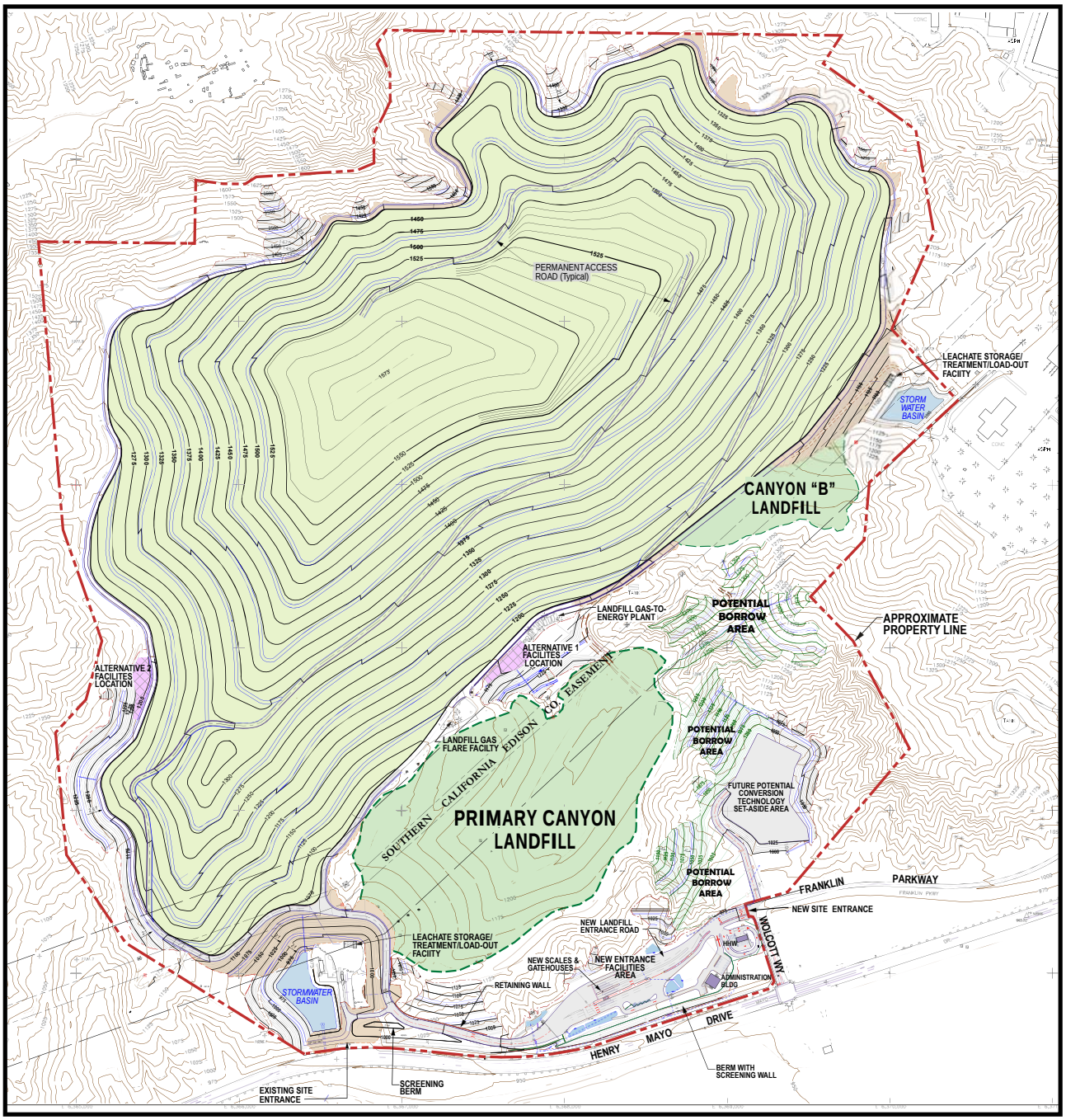

LEGEND

CLOSED LANDFILL AREA

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0 400 800
Feet

FIGURE 2-3
Proposed Project Final Grading Plan
Chiquita Canyon Landfill Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2014

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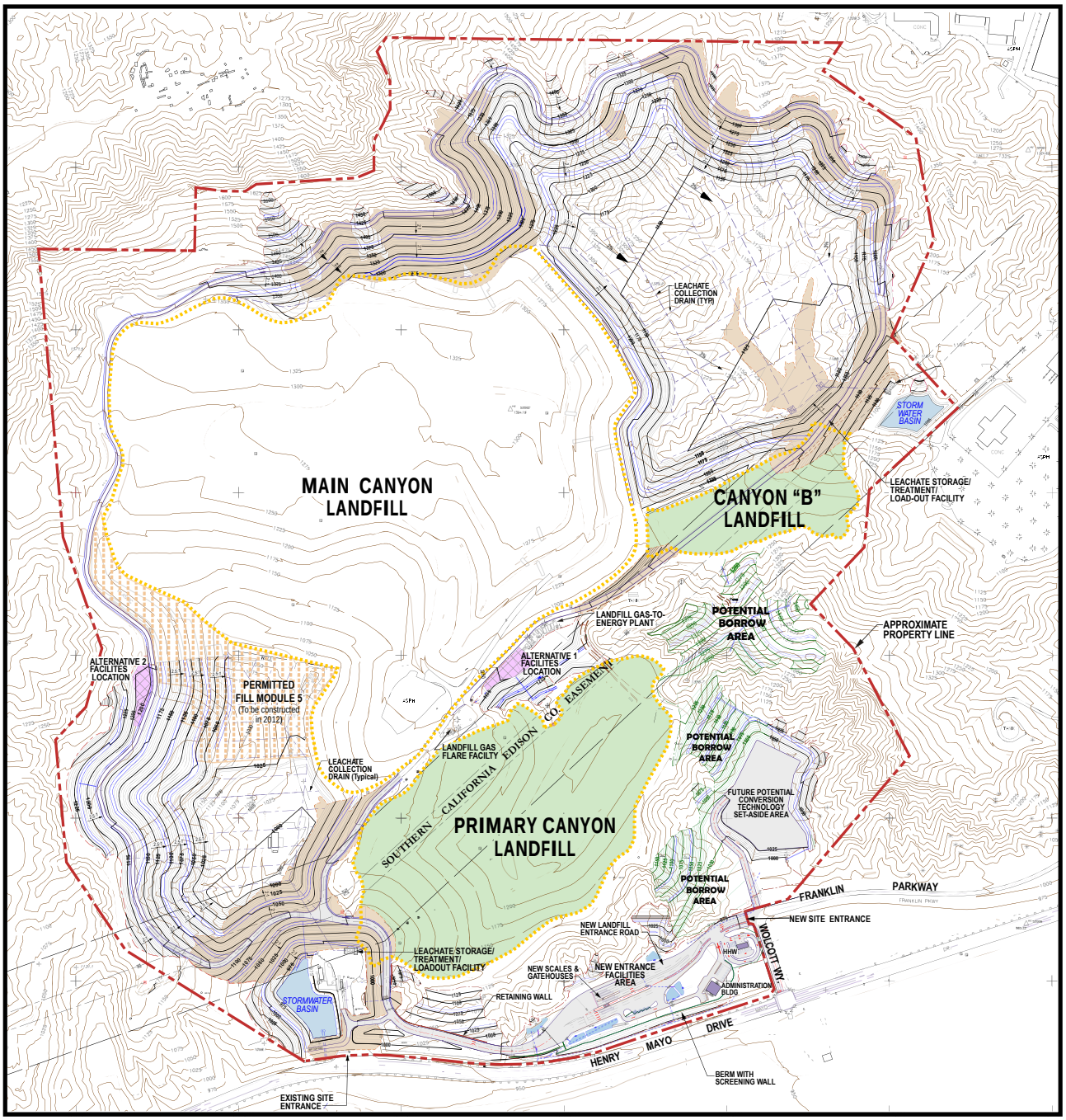

LEGEND

- LIMIT OF EXISTING LANDFILL (4/6/10)
- CLOSED PERMITTED LANDFILL AREA
- POTENTIAL BORROW AREA
- EARTHFILL
- ALTERNATIVE EQUIPMENT/MAINTENANCE AREA

N

0 400 800
Feet

FIGURE 2-4
Proposed Project
Excavation Plan
Chiquita Canyon Landfill
Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2014

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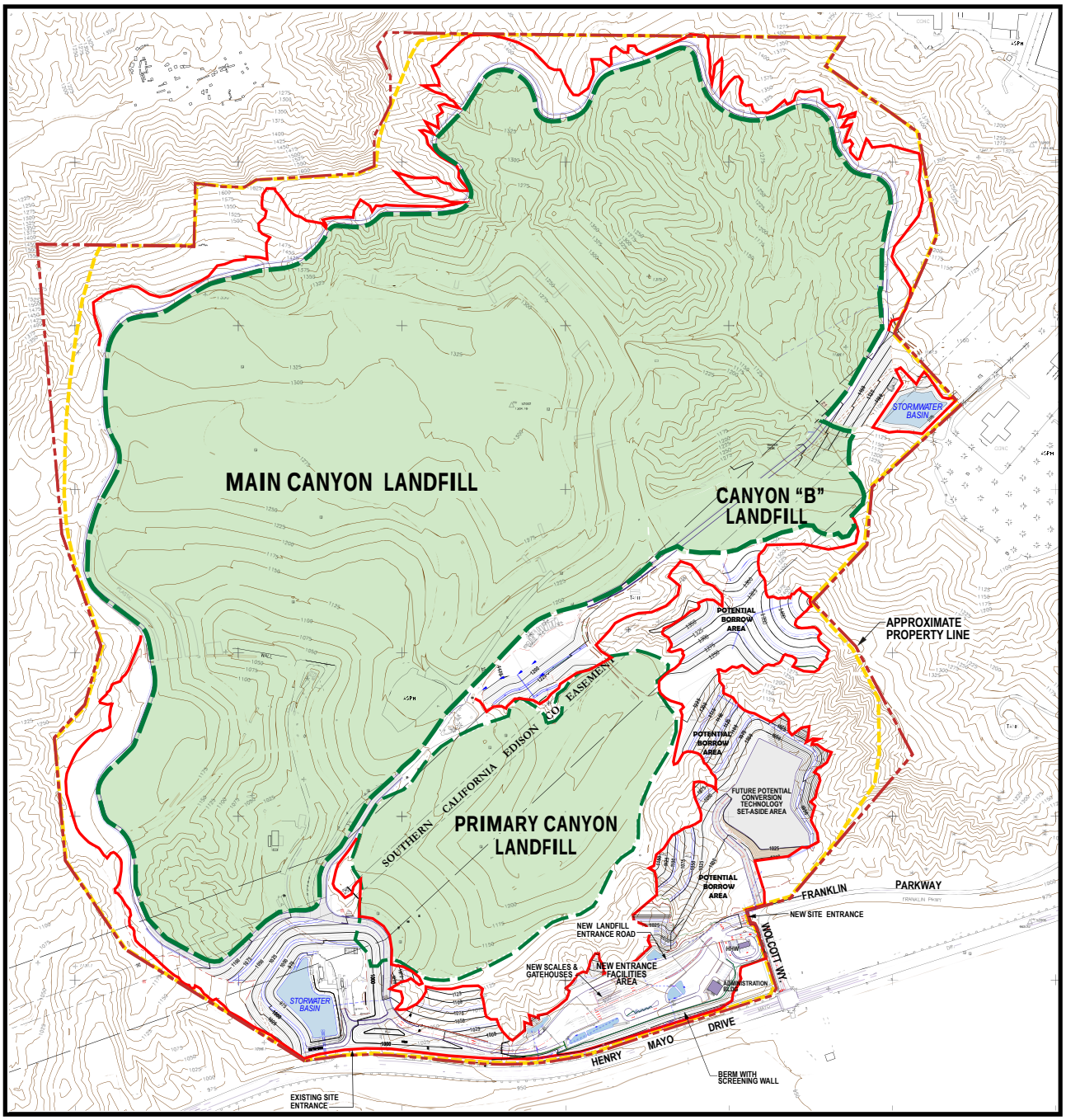

LEGEND

- LIMIT OF DISTURBANCE
- LIMIT OF LANDFILL
- EXCAVATION/EARTHFILL
- LANDFILL AREA

N

0 400 800
Feet

FIGURE 2-5
Proposed Project Limits
Chiquita Canyon Landfill
Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

NOTE: Any area within the limit of disturbance
can be used for soil stockpiling

Source: Golder Associates, 2014

ES050411114300SCO432307.11.01 CCL_proposed_projlimits_v8.2014.ai 7/14

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2.2.5 Materials to Be Diverted from Waste Disposal

CCL is actively engaged in waste diversion activities; that is, diverting materials from waste disposal and putting them to beneficial reuse. This activity preserves CCL's disposal capacity for municipal solid waste (MSW) to the maximum extent feasible. Materials diverted from waste disposal are not calculated as part of the disposal tonnage for the Proposed Project, but are considered when evaluating potential truck trips and traffic volume for the project. The type of materials diverted from waste disposal and volume of material is highly variable and depends on local activities that would produce these materials. A list of materials received by CCL and diverted for beneficial reuse, along with how the materials are typically reused at CCL, is provided in Table 2-2:

TABLE 2-2
Materials Diverted from Waste Disposal and Typical Beneficial Reuse at CCL

Material Type Diverted from Waste Disposal	Beneficial Reuse at CCL
Shredded Curbside Green Waste	Used for temporary slope stabilization, erosion control, fugitive dust control and alternative daily cover
Clean Soil	Used as daily cover
Contaminated Soil	Used as daily cover
Treated Auto Shredded Waste (TASW)	Used as alternative daily cover
MRF Fines	Used to protect methane gas pipeline system
Tire Shred	Used to protect the methane gas pipeline system as trench backfill
C&D Fines	Used to protect methane gas pipeline system and liner system
Concrete	Used to build all-weather surfaces onsite (roads and tipping pads at working face); reduces dust and water use; used for landfill gas trench construction
Asphalt	Used to build all-weather surfaces onsite (roads and tipping pads at working face); reduces dust and water use
Processed C&D Material	Used to build all-weather surfaces onsite (roads and tipping pads at working face); reduces dust and water use; used as alternative daily cover

The type and volume of material diverted from waste disposal is highly variable on a daily basis. However, on a potential peak day, the Proposed Project may take in up to 20,505 cubic yards of materials diverted from waste disposal, which represents approximately 1,065 vehicles. These vehicles are addressed in Section 2.2.7.9, Traffic. The potential peak day is a hypothetical scenario wherein the historical maximum quantity of each type of diverted material received at CCL would arrive on the same day. The estimated volume of material received at CCL and diverted from waste disposal is not anticipated to increase for the Proposed Project under a potential peak day scenario.

In addition to the above described materials, diversion activities at CCL also include a composting operation that previously operated at the landfill and is anticipated to restart at the landfill. Details of the composting operation are provided in Section 2.2.11.

The combination of waste diversion, composting operation, household hazardous waste facility, and future waste conversion at CCL will continue to provide a robust contribution to landfill waste diversion programs that are relied upon by many local cities and communities in achieving state-mandated goals, including Assembly Bill 939 (current 50% diversion goal) and Senate Bill 341 (75% diversion by 2020). All materials received at CCL are tracked by source and reported by origin, so that the contributing communities can track their own waste diversion success.

2.2.6 Landfill Construction

Construction for the CCL MPR includes development of the entrance and support facilities and landfill cell construction. CCL will ensure that contractor bid specifications for construction projects require offsite pressure washing of construction vehicles and equipment prior to being brought onsite, and verification of this

activity before equipment enters the site. Further, the bid specifications will require that equipment is pressure washed after leaving the site and prior to being used elsewhere.

2.2.6.1 Entrance and Support Facilities Construction

Construction of the site entrance and associated support facilities would occur immediately upon project approval, and would take approximately 10 months to complete. Construction working hours would generally be daylight hours between 7:00 a.m. and 7:00 p.m., Monday through Saturday. The HHWF would be constructed at the same time as the site entrance and support facilities. Pre-construction activities include staking the new entrance area and conducting biological surveys of the disturbance area. Ground-disturbing activities will be monitored for biological and cultural resources, as appropriate.

2.2.6.2 Cell Construction

The landfill is developed in a series of cells. Construction of cells and associated environmental monitoring features would occur periodically over the life of the landfill. Generally, cell construction would occur every 18 months to 5 years over the life of the Project, for approximately 10 months each time. Construction working hours would generally be daylight hours between 7:00 a.m. and 7:00 p.m., Monday through Saturday. Monitoring wells will be installed prior to cell development, so that background water quality can be established for each well. Generally, the area identified for cell construction would be staked, and pre-construction biological surveys would be conducted for the disturbance area. Once cleared for construction, the cell would be excavated (Section 2.2.8.1) and liner would be installed (2.2.8.2). Concurrently, any necessary expansion of the LCRS would be installed, as well as LFG collection systems, including LFG monitoring probes. Ground-disturbing activities will be monitored for biological and cultural resources, as appropriate.

2.2.7 Landfill Operation

The Proposed Project includes continued landfill operations, as described below.

2.2.7.1 Access and Site Security

As part of the Proposed Project, the site entrance will be located at Wolcott Way, as shown in Figure 2-1 and described in Section 2.2.1.

2.2.7.2 Load Checking and Waste Screening

As described above, as a Class III landfill, CCL is prohibited from disposing hazardous waste, including household hazardous waste. To prevent hazardous waste from being disposed, CCL will continue to implement its existing load checking program as part of the Proposed Project. The program is summarized below.

Load checking is required at all Class III landfills and transfer stations, as specified in state regulations. WDRs for the landfill, issued by the California Regional Water Quality Control Board (RWQCB), Los Angeles Region, incorporate load checking requirements; as does the Solid Waste Facility Permit, issued by the LEA after concurrence by the California Department of Resources Recycling and Recovery (CalRecycle), which administers the programs formerly managed by the California Integrated Waste Management Board (CIWMB). CCL's load checking program has been reviewed and approved by applicable regulatory agencies.

Established procedures at CCL are used to prevent hazardous waste entering the landfill. These procedures include posting of signs, education of existing and new customers, verbal and visual screening at the scale house, and daily random checks of incoming vehicles. Signs are posted at the landfill entrance notifying customers that no hazardous wastes are accepted at the facility, and that there are applicable policies and procedures for disposing of unacceptable waste.

Visual inspections are conducted on a daily basis by scale house operators, and they may question drivers for possible indications of unacceptable wastes. Should scale house operators discover a load that contains suspicious looking wastes, they summon the appropriate supervisory or load-checking personnel for a determination of the acceptability of waste. Records are kept to document any discoveries. In the absence of requests from the scale house operators, the load-check technician selects random vehicles to perform a

minimum of five load checks each day. The load checks are performed as close as possible to the working face. The material is inspected for any prohibited waste after unloading. The observations of the random inspection are recorded on a data sheet, and photographs and samples of the load are taken if necessary.

The Proposed Project includes construction of a Household Hazardous Waste Facility (see Section 2.2.10). In the event hazardous waste is inadvertently brought to the landfill and identified during load checking at the landfill, if the driver is not otherwise directed to take the waste to a licensed hazardous waste disposal facility, the HHWF would provide a secure and approved location to store these materials in preparation for shipment to markets that will recycle the materials or shipment to a hazardous waste disposal site.

2.2.7.3 Support Facilities

In addition to the new scale house and scales, an administration building, storage, and employee parking will be constructed at the new site entrance, as shown in Figure 2-1. An equipment maintenance facility will also be provided onsite; however, the facility location is dependent on site operations, and the equipment maintenance facility may be relocated more than once. This maintenance facility will include a shop building, an office trailer, fuel storage tank, and an equipment wash area. Additionally, various materials used for equipment maintenance (e.g., solvents, waste oil, oil, and other fluids) are stored adjacent to the shop building. Equipment is stored onsite, either adjacent to the working face of the landfill or at the equipment maintenance area. As allowed by CUP No. 89-081(5), hauling trucks and/or containers for waste collection may be stored on landfill property. An employee break room may be located in the equipment maintenance facility or in a trailer on the site.

Also, one or more additional landfill gas (LFG) flares will be required to handle increased LFG generation in the future. Potential locations for the equipment maintenance facility and the LFG flare are shown in Figure 2-3.

The permanent access road will be lengthened, as necessary, to provide access to the East Canyon and North Canyon. Temporary haul roads will also be constructed to provide access to active landfill areas as is currently done for the existing operation.

2.2.7.4 Hours of Operation

Hours of operation for the Proposed Project will be the same as the currently permitted operating hours. Based on CUP No. 89-081(5), the following hours of operation are permitted:

- Landfill operations 24 hours per day, except from 5:00 p.m. Saturday through 4:00 a.m. Monday. Access to the landfill by both commercial and general public vehicles is allowed during all hours the landfill is operating. Landfill maintenance activities may occur 24 hours per day, 7 days per week.
- Option to operate a maximum of four Sundays per year, if desired, for the quarterly Val Verde cleanup days. If CCL exercises the option of Sunday operation, the schedule of operation will be tailored to the specific need of the situation.
- Composting facility operations 24 hours per day, 7 days per week.

2.2.7.5 Personnel

Full-time staff for the Proposed Project will increase by approximately 25, for a total of approximately 50, including additional administrative staff, maintenance personnel, equipment operators, scale house personnel, spotters, LFG technicians, and laborers. Because the volume of incoming waste may vary, the number of staff may fluctuate to some degree. In all cases, staffing will be set to provide for an occupationally and environmentally safe landfill operation at CCL.

2.2.7.6 Equipment

Equipment at CCL for the Proposed Project will increase by 15 to 20 additional pieces. Anticipated additional equipment includes two motor graders, three bulldozers, three compactors, two scrapers, two water trucks, five trailer-mounted light plants, and one water wagon. Consistent with existing practices, at all times, CCL will provide sufficient types and numbers of equipment to properly operate in accordance with applicable permits,

approvals, safety considerations, and industry standards. CCL will also periodically review its equipment complement based on operating and maintenance costs, air quality regulations, and performance, and compare it with other available equipment. This review process may result in future equipment changes designed to achieve lower operating and maintenance costs, lower air emissions, or better performance. All landfill equipment will be maintained on a regular basis to remain in good working order. Equipment will be routinely inspected and maintained with tune-ups and replacement of worn-out mechanical and electrical parts on an as-needed basis and as recommended by the manufacturer.

2.2.7.7 Disposal and Cover Procedures

No change to disposal and cover procedures will occur as a result of the Proposed Project.

Waste will continue to be delivered to CCL in transfer vehicles, collection trucks, and various other vehicles by commercial haulers and the general public. After being processed at the scale house, vehicles follow signs to the active disposal area. When necessary (generally when atypical routing is required), traffic is temporarily directed in the appropriate direction by a flagger. For safety purposes, site personnel direct traffic at the working face. To prevent accidents, site personnel separate large hauling vehicles from smaller general public vehicles at the active working face.

CCL will continue to be constructed by the area fill method, wherein waste is spread and compacted in approximately 2-foot-thick layers on a working face of approximately 200 feet by 300 feet and sloped at 3:1 (horizontal:vertical) or flatter. The compaction equipment traverses the entire length of the working face, making three to five passes over each 2-foot-thick (minimum) layer of waste to obtain adequate compaction of all wastes. To prevent bridging of the surrounding waste, large or bulky wastes are separated and placed in the lower portion of the advancing lift, and thoroughly crushed by compaction equipment.

The work area over which waste is spread is minimized to control odor and litter. Additionally, the waste is covered at least daily with a layer of compacted soil or alternative daily cover (ADC). As needed, CCL covers portions of the working face multiple times during the day to minimize potential odors. Consistent with Title 27, types of ADC that may be used at CCL include geosynthetic materials, foam, processed green material, ash and cement kiln dust materials, treated auto shredder waste (TASW), contaminated sediment, dredge spoils, foundry sands, energy resource exploration and production waste, compost materials, construction and demolition wastes, shredded tires, and spray applied cementitious products. The source of ADC depends on the availability of materials available for beneficial reuse that are approved for use as ADC This practice will continue with implementation of the Proposed Project. Materials used for alternative daily cover are approved for use by the LEA and CalRecycle; if regulatory guidance changes regarding the use of any of these materials for ADC, CCL will comply with the revised guidance.

2.2.7.8 Sewage and Water

No changes to the water uses onsite or sewage disposal are proposed as a result of the Proposed Project.

CCL currently does not have sewage or water service provided by a public utility system. Sanitary facilities at the landfill office are connected to a permitted septic system, and portable toilets are used for other areas of the site. Unless a sewer line becomes available in the future, the Proposed Project will continue to rely on these facilities. A new septic system may be constructed to support the entrance facilities.

Bottled drinking water will continue to be provided at the scale house, landfill office, and equipment maintenance facility for employees. Employees can fill their personal containers for their own use when on the landfill.

Water for routine landfill operation, including dust control and irrigation, will continue to be supplied from an offsite irrigation well south of the landfill on Newhall Ranch. During periodic construction of new landfill disposal cells, additional construction water will be supplied via a separate water supply line from storage tanks located north of the landfill. Currently, this line is only used during construction projects. However, when the Newhall Ranch Project is developed, the irrigation well on Newhall Ranch that currently supplies the

landfill will be removed. At that time, CCL will begin using the water supply line north of the landfill, which is connected to Valencia Water Company's system, for both construction and routine operation.

Water for dust control, irrigation, and fire prevention will continue to be pumped to and stored in various onsite storage tanks located throughout the site. The total onsite water storage capacity at CCL is currently about 150,000 gallons. Water usage is expected to increase to approximately 150 acre-feet per year (afy) with implementation of the Proposed Project, up from an average of approximately 77 afy. The amount of water required may vary according to the season and rainfall amounts, with more water being required during the hot, dry summer months and during years with limited rainfall. Additional water storage tanks may be required in response to the increase in water usage at CCL as a result of the Proposed Project. As these tanks are portable; the size and number and location of tanks onsite will vary to meet operational efficiency.

2.2.7.9 Traffic

In addition to traffic at CCL that results from incoming waste, there are several other sources of in- and outbound traffic at CCL. A wide variety of material that is diverted from disposal and put to beneficial use will continue to be accepted at CCL, including but not limited to alternative daily cover, road base, concrete, asphalt, green waste, and erosion control material. Material from CCL, including clean soil, compost products, and recycled materials, may also be trucked from the site to other locations. Additionally, periodic fill module construction will continue to occur at CCL, during which time additional traffic related to construction activity will occur. Table 2-3 details the net change in the average daily traffic volume at CCL with implementation of the Proposed Project, and Table 2-4 details the net change in the potential maximum daily traffic volume at CCL with implementation of the Proposed Project. Although the estimates are based on historical records and future estimates for different vehicle types and material types, they do not represent a specific day or an average day. The total traffic shown is likely greater than the actual traffic that would be expected at the site on an "average" day.

TABLE 2-3
Summary of Net Change in Average Daily Inbound and Outbound Traffic with Proposed Project

	Average Daily Number of Vehicles[a, b]		
Traffic Source	**Proposed**	**Baseline**	**Net Change**
Inbound			
Trash (Disposal)[c]			
Transfer	465	231	234
Route	110	51	59
Roll-offs	102	62	40
Self Haul	14	10	4
Other Materials (Beneficial Reuse)			
Shredded Curbside Green Waste	12	15	-3
Clean Soil	14	5	9
Contaminated Soil[d]			
Large Trucks	20	20	0
10-Wheelers	17	17	0
Protective Cover			
TASW	40	24	16
MRF Fines	15	10	5
Tire Shred	0	0	0
C&D Fines	20	10	10
Road Base			
Concrete	5	1	4
Asphalt	0	0	0
Processed C&D Material	14	8	6
Composting[e]	0	0	0

TABLE 2-3
Summary of Net Change in Average Daily Inbound and Outbound Traffic with Proposed Project

Traffic Source	Average Daily Number of Vehicles[a, b]		
	Proposed	Baseline	Net Change
Outbound			
Clean Soil	2	1	1
Compost Products	0	0	0
Other	2	1	1
Special Projects[f]			
Cell Construction			
Mobilize/Demobilize Traffic	20	20	0
Contractor Employees	80	80	0
Employees			
Landfill – Permanent	55	34	21
Landfill – Temporary	14	7	7
LFGTE Plant	2	2	0
Transfer Drivers	0	0	0
Total	**1,023**	**609**	**414**

[a] These numbers represent one-way trips, based on 5 days per week.

[b] The maximum number of trash vehicles in each category does not happen simultaneously. The daily maximum disposal tonnage would not exceed 12,000 tons per day.

[c] Regardless of actual vehicle mix, incoming disposal tonnage would not exceed 12,000 tons per day.

[d] Contaminated soils may also be disposed and not put to beneficial reuse.

[e] The existing CUP allows for operation of up to a 560-tons-per-day composting facility for windrow or in-vessel technology composting operation.

[f] These projects occur periodically, typically once every 2 to 3 years.

Notes:

MRF = Material Recovery Facility

TASW = treated auto shredder waste

C&D = construction and demolition

TABLE 2-4
Summary of Net Change in Peak Potential Daily Inbound and Outbound Traffic with Proposed Project

Traffic Source	Peak Potential Daily Number of Vehicles[a, b]		
	Proposed	Baseline	Net Change
Inbound			
Trash (Disposal)[c]			
Transfer	545	273	272
Route	600	300	300
Roll-offs	460	460	0
Self Haul	500	500	0
Other Materials (Beneficial Reuse)			
Shredded Curbside Green Waste	40	40	0
Clean Soil	200	200	0
Contaminated Soil[d]			
Large Trucks	300	300	0
10-Wheelers	60	60	0
Protective Cover			
TASW	200	200	0
MRF Fines	40	40	0
Tire Shred	15	15	0
C&D Fines	25	25	0

TABLE 2-4
Summary of Net Change in Peak Potential Daily Inbound and Outbound Traffic with Proposed Project

Traffic Source	Peak Potential Daily Number of Vehicles[a, b]		
	Proposed	Baseline	Net Change
Road Base			
Concrete	50	50	0
Asphalt	50	50	0
Processed C&D Material	30	30	0
Composting[e]	55	55	0
Outbound			
Clean Soil	100	100	0
Compost Products	8	8	0
Other	25	25	0
Special Projects[f]			
Cell Construction			
Mobilize/Demobilize Traffic	20	20	0
Contractor Employees	80	80	0
Employees			
Landfill – Permanent	55	34	21
Landfill – Temporary	25	25	0
LFGTE Plant	3	2	1
Transfer Drivers	4	4	0
Total	**3,490**	**2,896**	**594**

[a] These numbers represent one-way trips, based on 5 days per week.

[b] The maximum number of trash vehicles in each category does not happen simultaneously. The daily maximum disposal tonnage would not exceed 12,000 tons per day.

[c] Regardless of actual vehicle mix, incoming disposal tonnage would not exceed 12,000 tons per day.

[d] Contaminated soils may also be disposed and not put to beneficial reuse.

[e] The existing CUP allows for operation of up to a 560-tons-per-day composting facility for windrow or in-vessel technology composting operation.

[f] These projects occur periodically, typically once every 2 to 3 years.

Notes:
MRF = Material Recovery Facility
TASW = treated auto shredder waste
C&D = construction and demolition

2.2.8 Landfill Design Features

Design of the landfill is premised on prescriptive and performance standards set forth in state and federal regulatory requirements that establish environmental protection standards to prevent harm to the environment. These design standards and requirements are referenced throughout in the discussion of the landfill's design. A central feature of the environmental protection standards is the composite liner system, designed to prevent waste from contacting water, and to prevent the escape of leachate or landfill gas to the air or to waters of the state. The state and federal landfill design requirements also create redundancy and protective measures to prevent harm to the environment.

2.2.8.1 Excavation

Site excavation is divided into a series of excavation areas associated with fill modules. The excavation sequence is designed for efficient excavation and handling of soils, access, drainage, liner preparation, and controlled waste placement.

Landfill areas are excavated sequentially in a series of cells to create new space for placing trash. Excavation generates the soils necessary for landfill operations (cover soils) and allows the base and side slopes of the excavated cells to be prepared for lining. Typically the next landfill fill module is constructed adjacent to the

active fill module that is accepting waste. In most instances, excavated soils are stockpiled onsite to allow timely preparation of the next fill module.

The excavation and base preparation plan (Figure 2-4) shows the design of the landfill base for the Proposed Project. The horizontal limits of excavation, excavation contours, and slopes are shown in Figure 2-4. The East Canyon, North Canyon, and the South Footprint will be excavated in a series of construction projects over many years. Excavation and earth fill are also required for the facility. In addition to excavation from areas to be developed, potential soil borrow areas are shown in Figure 2-4. The soil borrow areas are utilized to meet soil requirements not met by other excavation areas.

The excavation layout sequence is designed for efficient excavation and handling of soils, access, drainage, liner preparation, and controlled waste placement. The planned excavations typically provide the soil required for site operations. Excavation quantities for the Proposed Project were shown previously in Table 2-2. Soils not needed for immediate landfill operations will be stockpiled onsite for subsequent use or exported. Figure 2-5 shows the limit of excavation and earthfill, limit of landfill disposal area, and limit of disturbance (areas outside of excavation, earthfill, and landfill where activity may still occur in order to construct the various stages of the landfill or to support landfill operations). Any area within the limit of disturbance may be used for soil stockpiling.

As currently planned, the proposed excavation quantity balances the landfill soil requirements. The soil quantities shown in Table 2-2 do not include soil delivered to the landfill by contractors and from other sources.

2.2.8.2 Liner System

No change to the landfill liner system is anticipated as a result of the Proposed Project, but the liner system remains subject to the requirements of RWQCB. The existing liner system that will be implemented by the Proposed Project as well is described below.

A liner system that meets or exceeds the standards of Title 27 *California Code of Regulations* 20340 (Title 27), WDR Order No. 93-062, implementing the United States Environmental Protection Agency (EPA) Subtitle D requirements, and WDR Order No. 98-086, is constructed on the excavated base and side slopes of each fill module. Historically, composite base liners using either a bentonite admix or geosynthetic clay liner (GCL) in conjunction with a high-density polyethylene (HDPE) geomembrane have been used at CCL. RWQCB has recently approved a low-permeability soil layer in conjunction with an HDPE geomembrane. The liner system is consistent with strength requirements and meets the stability criteria previously developed for CCL and approved by RWQCB. Pursuant to WDR Order No. 93-062, the side slope liner consists of HDPE geomembrane placed over a prepared subgrade (Figure 2-6). Prior to construction of each fill module, the liner design is subject to review and approval by RWQCB pursuant to Title 27 and WDR Order No. 98-086.

Both Subtitle D and California regulations implementing Subtitle D allow an alternative liner design if it can be demonstrated that the alternative liner design provides protection to groundwater equivalent to the prescriptive standard liner design. RWQCB has previously approved an engineered alternative liner design, incorporating a GCL, for the last several disposal modules.

The liner system is designed to contain liquid (leachate) that accumulates in the landfill and direct it to the leachate collection and removal system (LCRS). The LCRS is composed of a drainage layer and perforated collection pipes. The collection pipes intercept leachate flowing through the drainage layer and convey the leachate to collection points. Leachate is pumped from the collection points periodically, and depending on quality, either used onsite for dust control or transported offsite for disposal. The LCRS is designed to withstand deformations of the foundation materials anticipated during the design earthquake so that any permanent displacement of the foundation slopes does not impair the integrity of the liner and LCRS. A 2-foot soil layer, or approved alternative, termed the “operations layer,” is placed over the base liner and on the side slope liner to protect the liner system before waste is placed.

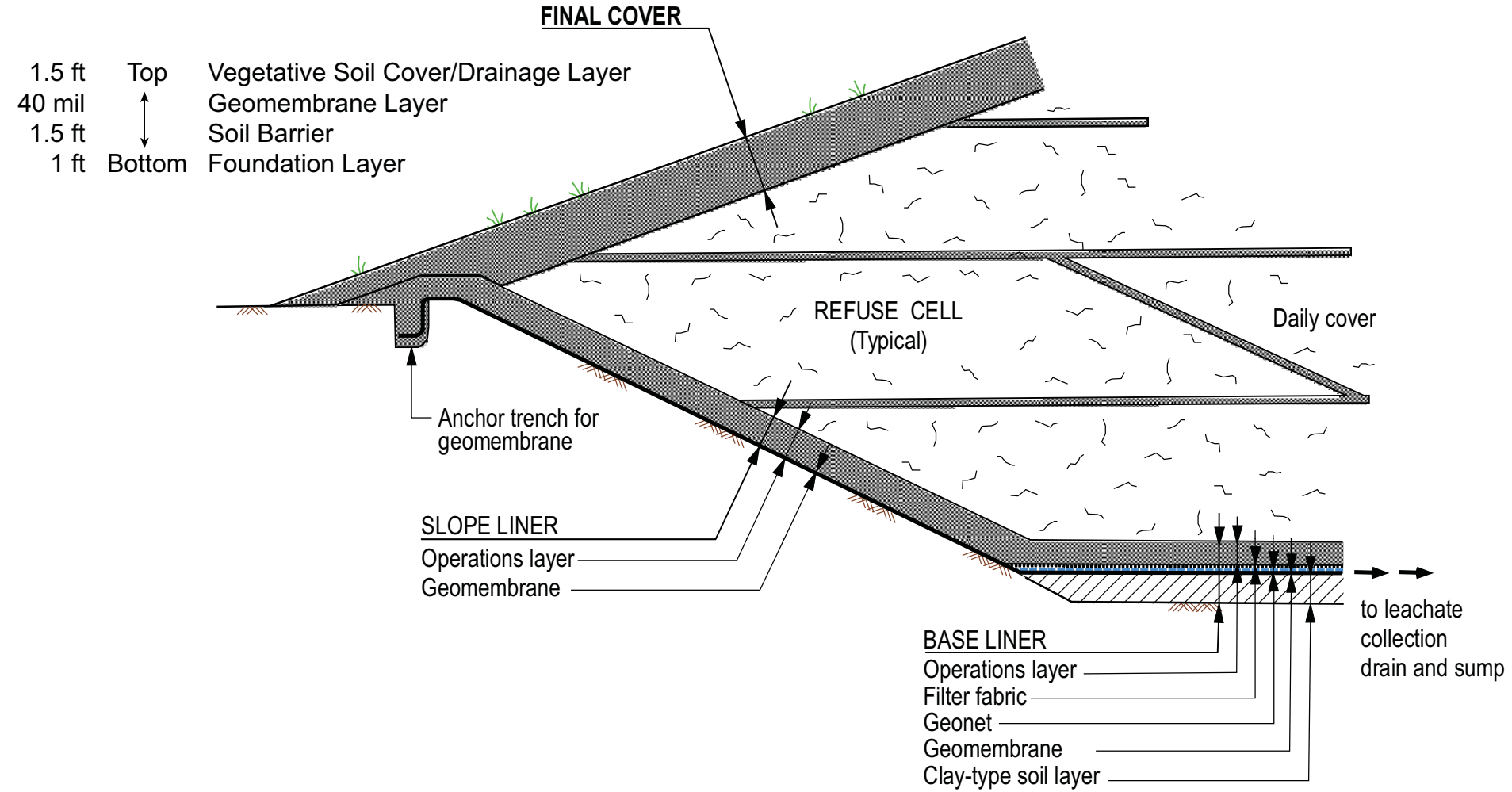


FIGURE 2-6
Base and Slide Slope Liner
Chiquita Canyon Landfill
Master Plan Revision

Before construction of the liner system, a detailed construction quality assurance (CQA) plan for the installation of the liner and LCRS must be developed and subsequently submitted to and reviewed and approved by RWQCB. The CQA plan defines the extensive testing to be performed during construction to ensure the liner and LCRS are constructed in accordance with the plans and specifications.

2.2.8.3 Final Grading Plan

The landfill final grading plan for the Proposed Project, shown in Figure 2-3, shows the proposed contours for landfill development. Consistent with the existing landfill grading plan, the design of the landfill final grading plan is controlled by surrounding topography, existing limits of the waste fill, waste and soil consolidation and settlement considerations, slope stability requirements, minimum surface gradients required to adequately drain the completed fill, drainage requirements of stormwater drainage control facilities, aesthetics, and site end use considerations.

Final landfill slopes will be constructed no steeper than 3:1. An earthfill berm will be constructed at the south end of the Main Canyon area to serve as a buttress. A screening berm is proposed near the existing scale house to provide a visual screen from SR-126. (As noted in Section 2.2.1, the screening berm may be replaced by a wall depending on the Caltrans SR-126 widening design.) To create a slope designed to minimize erosion and future maintenance, 20-foot-wide benches will be constructed at approximately 50-foot-elevation change intervals. The top deck final grades will be no flatter than 3 percent to provide sufficient slope for surface water runoff after anticipated settlement of the underlying waste fill. The entire landfill will be covered with a final cover designed to minimize infiltration of precipitation. Landfill top deck and side slope areas will receive a final cover designed to meet the requirements of the regulation applicable at the time of construction. As discussed in further detail in Section 2.2.6.4, the final cover will be placed and vegetated as individual areas of the landfill are brought to final grade. A Final Closure Plan, with all the details of the final cover design and revegetation plan, will be submitted to RWQCB and CalRecycle for approval. State law requires the Final Closure Plan to be submitted and approved before actual closure construction begins.

The fill module layout plan (Figure 2-7) presents a staged sequence of fill placement to achieve the final grades shown in Figure 2-3. The landfill is developed sequentially, considering the effects of landfill stability, allowing the final cover and drainage facilities to be completed as the fill progresses. The remaining Main Canyon area and the South Footprint are proposed to be developed in three fill modules, Fill Modules 5, 6, and 7. The East Canyon and North Canyon are proposed to be developed in five fill modules, Fill Modules 8 through 12. (The fill modules shown in Figure 2-7 represent the lined footprint of each module. In most cases, the module will “lie” against an adjacent module or go “up and over” an adjacent module.)

The development sequence shown in Figure 2-7 is a concept drawing that represents a logical site development plan with inherent assumptions about what might happen in the future. However, many factors at any future point in time may require changes to the execution of the development plan. Fill modules may be developed in phases, or combined, or not developed sequentially. Factors that affect the actual timing and sequence of future cell development include: market conditions that dictate incoming waste volumes, interim soil handling requirements (temporary stockpile locations), availability of alternative cover materials, internal access roads and traffic flow, interim stability, temporary drainage patterns, optimum control of waste placement, fill module construction costs, and other related operational aspects. These factors are reevaluated many times during the life of the landfill and are used to develop the actual fill sequence plans.

2.2.8.4 Final Cover Design

The Proposed Project will follow the final cover design included in the *Preliminary Closure and Postclosure Maintenance Plan, Chiquita Canyon Landfill, Los Angeles County, California,* prepared by Golder Associates, Inc. in April 2010 and revised in July 2010 and September 2011. No change to the landfill final cover design is anticipated as a result of the Proposed Project, unless approved by the appropriate regulatory agencies.

When the current landfill reaches capacity, it will be covered with a final cover designed to minimize water infiltration into the landfill and meet or exceed appropriate regulatory standards. The landfill final cover will consist of two major areas: the top deck and the side slopes. Consistent with Title 27 requirements, the final

cover of the top deck and side slope areas of the completed landfill will be designed by a registered civil engineer or certified engineering geologist, and placed in a manner consistent with an approved CQA program. Specifically, the final cover design will consist of the following layers from bottom to top:

- A minimum 1-foot-thick foundation layer, which will be placed as intermediate cover during waste disposal operations
- A minimum 1.5-feet-thick soil barrier with a maximum hydraulic conductivity of 1×10^{-5} centimeters per second
- A minimum 40-mil-thick geomembrane liner
- A minimum 1.5-foot-thick vegetative soil cover/drainage layer, suitable to support good vegetation of native plant species

The vegetative soil layer and the drainage layer will be capable of providing adequate rooting depth for drought-resistant vegetation that will aid in minimizing erosion. Current regulations allow alternative final cover designs, if approved by RWQCB, the LEA, and CalRecycle. As part of the final closure and post-closure maintenance plan, CCL may propose an alternative final cover design that conforms to regulatory performance standards. If an alternative final cover is proposed, the engineered alternative proposal will demonstrate that the engineered alternative is consistent with the performance goals of the final cover system specified in current regulations. The RWQCB has previously approved an alternative final cover for Canyon B and the Primary Canyon.

Final cover will be placed as significant portions of the landfill reach final grade, consistent with Title 27. The quantity of final cover soils required was presented previously in Table 2-2. Final cover will be placed within 180 days after placement of the final lift of waste or in accordance with the closure schedule contained in the final closure and post-closure maintenance plan to be approved by RWQCB, the LEA, and CalRecycle. The final closure and post-closure maintenance plan will be submitted to RWQCB, the LEA, and CalRecycle 2 years before any final closure activities. At that time, a CQA program will be proposed. Final cover construction will be conducted under the supervision of a registered civil engineer.

2.2.9 Environmental Monitoring

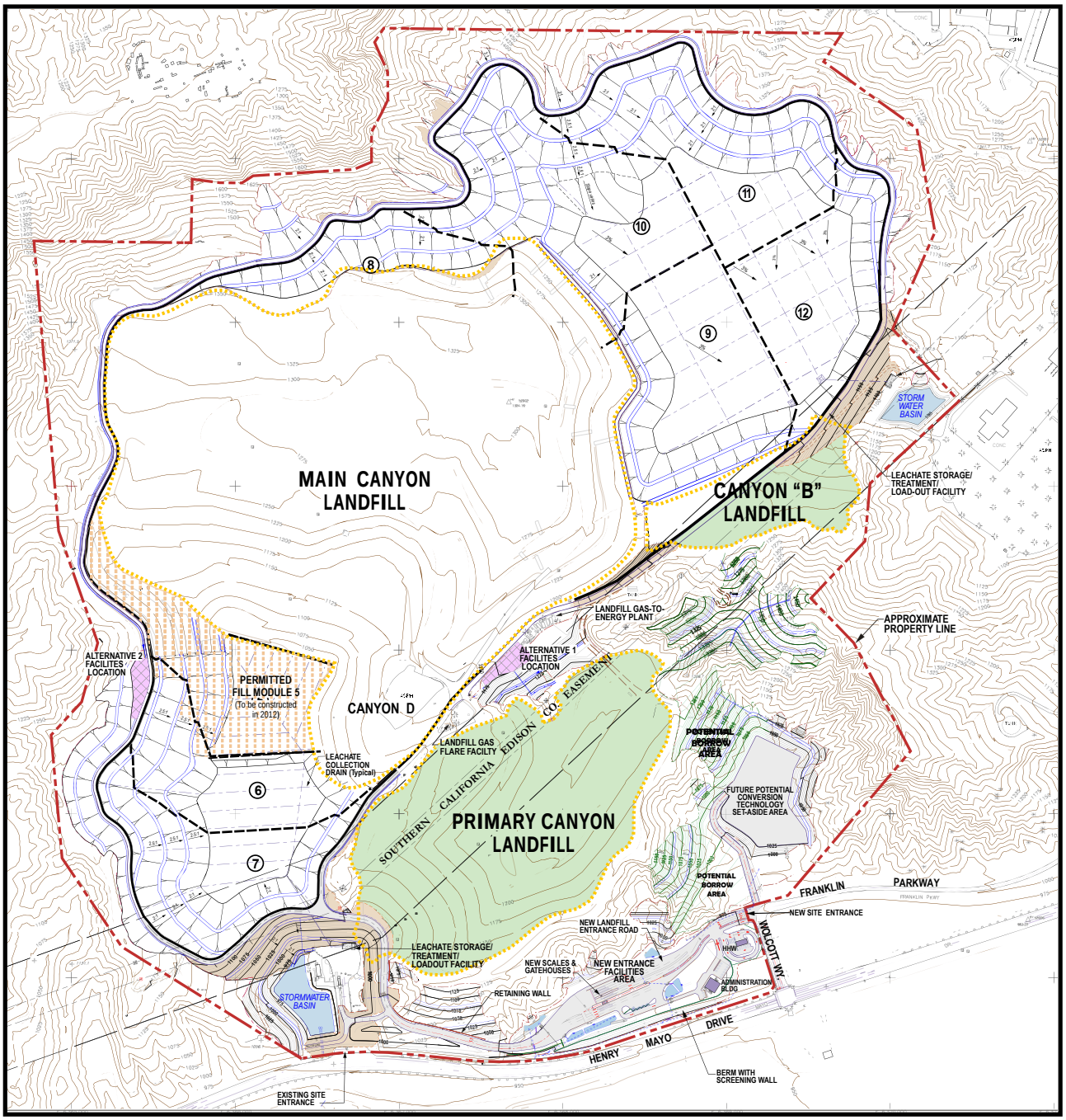
The landfill environmental monitoring systems are a component of the overall landfill design and operating standards established by state and federal regulations and work in conjunction with the landfill design standards to provide a key assurance of early detection of any potential for impairment of groundwater or air quality.

2.2.9.1 Water Quality Monitoring

Stringent regulations regarding landfill design and operation, in particular liner design, are intended to prevent water quality impacts. As described above, the liner system for CCL meets the strength requirements and meets the stability criteria previously developed for CCL and approved by RWQCB.

Water quality monitoring has been conducted at CCL since January 1986. The current program requires monitoring of the groundwater and the unsaturated (vadose) zone, monitoring for leachate production, monitoring of surface water, and monitoring of the incoming waste stream. The monitoring program is conducted in accordance with the current Monitoring and Reporting Program (MRP) contained in RWQCB Order No. 98-086. Quarterly monitoring is required by the current WDRs and MRP for the landfill, and data are reported in semiannual and annual reports submitted to RWQCB.

The monitoring program for the Proposed Project will be similar to the existing program and will require approval by the RWQCB under the landfill facility WDRs. A summary of the existing program and proposed minor modifications under the new program is provided below.



LEGEND

- ⑤ FILL MODULE DESIGNATION
- MODULE LIMIT LINE
- LIMIT OF EXISTING LANDFILL (4/6/10)
- CLOSED PERMITTED LANDFILL AREA
- MRF AND HOUSEHOLD HAZARDOUS WASTE FACILITIES LOCATION
- ALTERNATIVE EQUIPMENT/MAINTENANCE AREA

FIGURE 2-7
Proposed Fill Module Layout Plan
Chiquita Canyon Landfill Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2014

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2.2.9.2 Groundwater and Vadose Zone Monitoring

The Proposed Project will require modification of the existing monitoring network. Based on the extended waste footprint, replacement of existing monitoring points and installation of new monitoring points are necessary to comply with Title 27 monitoring requirements.

Groundwater and Vadose Monitoring Network

The current groundwater quality monitoring network consists of 14 groundwater monitoring wells (DW-1, DW-3, DW-7, DW-8, DW-12, DW-14, DW-15, DW-16, DW-17, DW-18, DW-20, DW-21, DW-28, and PZ-4). Additional points DW-9, DW-23, DW-24, DW-25, DW-26, DW-27, PZ-3, PZ-5, PZ-6, PZ-7, GP-15, GP-16, GP-17, GP-21, GP-22, GP-24, and GP-25 provide groundwater elevation data only.

Wells DW-24, DW-26, PZ-5, and PZ-6, which are northeast of the landfill, are not part of the groundwater monitoring program specified in the WDRs and MRP, but are monitored for potential future use as background water quality data.

The extension of the landfill footprint into the South Footprint, East Canyon, and North Canyon will require abandoning monitoring wells DW-3, DW-6, DW-12, DW-20, DW-24, and DW-25, and piezometers PZ-3, PZ-5, PZ-6, and PZ-7. These will be replaced by seven new monitoring wells (DW-29 through DW-35). The proposed locations for the new monitoring wells are shown in Figure 2-8.

Monitoring wells DW-30, DW-31, DW-32, DW-33, and DW-34 will provide downgradient monitoring locations for the East Canyon and the North Canyon. Monitoring well DW-29 will provide downgradient monitoring for the South Footprint. Monitoring well DW-35 will replace DW-12 and will provide a downgradient monitoring location for the Primary Canyon. Piezometer PZ-4 will be converted to a monitoring well and added to the monitoring network to provide a downgradient monitoring location for Canyon B.

The proposed monitoring well network will consist of monitoring wells DW-1, DW-7, DW-8, DW-14 through DW-18, DW-23, DW-26, DW-28 through DW-35, and piezometer PZ-4. Monitoring wells DW-9, DW-21, and DW-27 will be used for groundwater elevations only. The proposed groundwater monitoring network is summarized in Table 2-5.

TABLE 2-5
Proposed Groundwater Monitoring System

Area	Downgradient Monitoring Points	Upgradient Monitoring Points
Main Canyon	DW-1 DW-15 DW-16 DW-18 DW-21[a] DW-29	DW-8 DW-9[a] DW-17 DW-28
East and North Canyons	DW-23 DW-26 DW-30 DW-31 DW-32 DW-33 DW-34	DW-27[a] DW-28
Primary Canyon	DW-1 DW-7 DW-18 DW-21[a] DW-35	DW-16 DW-17
Canyon B	DW-30 DW-31 PZ-4	DW-14

[a] Measured for groundwater elevation only.

The vadose zone monitoring system consists of vacuum lysimeter LP-1, vadose well SW-1, and multi-level LFG monitoring probes GP-9 and GP-10. (The highest monitoring level of GP-9 is the vadose zone monitoring point. The lowest monitoring level of GP-10 is vadose zone monitoring point VP-1.)

Vadose zone monitoring points LP-1, GP-9, and VP-1 (GP-10) are replaced with groundwater monitoring well DW-30 (vadose zone monitoring point VP-3) and LFG monitoring probe GP-29 (vadose zone monitoring point VP-2), as shown in Figure 2-8. The proposed vadose zone monitoring system comprises SW-1, VP-2 (GP-29), and VP-3 (DW-30). GP-29 is a multi-level probe. Only the shallow probe will be monitored as part of the proposed vadose zone monitoring system.

The proposed monitoring well network will be submitted to and approved by RWQCB before implementation.

The groundwater samples collected from the existing and proposed monitoring wells will represent the quality of groundwater passing the points of compliance, in accordance with Title 27, and will allow for early detection of a release from each waste management unit.

Monitoring Well Installation

The new monitoring wells will be installed prior to landfill development, so that background water quality can be established for each well. Piezometer PZ-4 will be converted to a monitoring well, and new wells will be installed at least 1 year before the development of the adjacent landfill area.

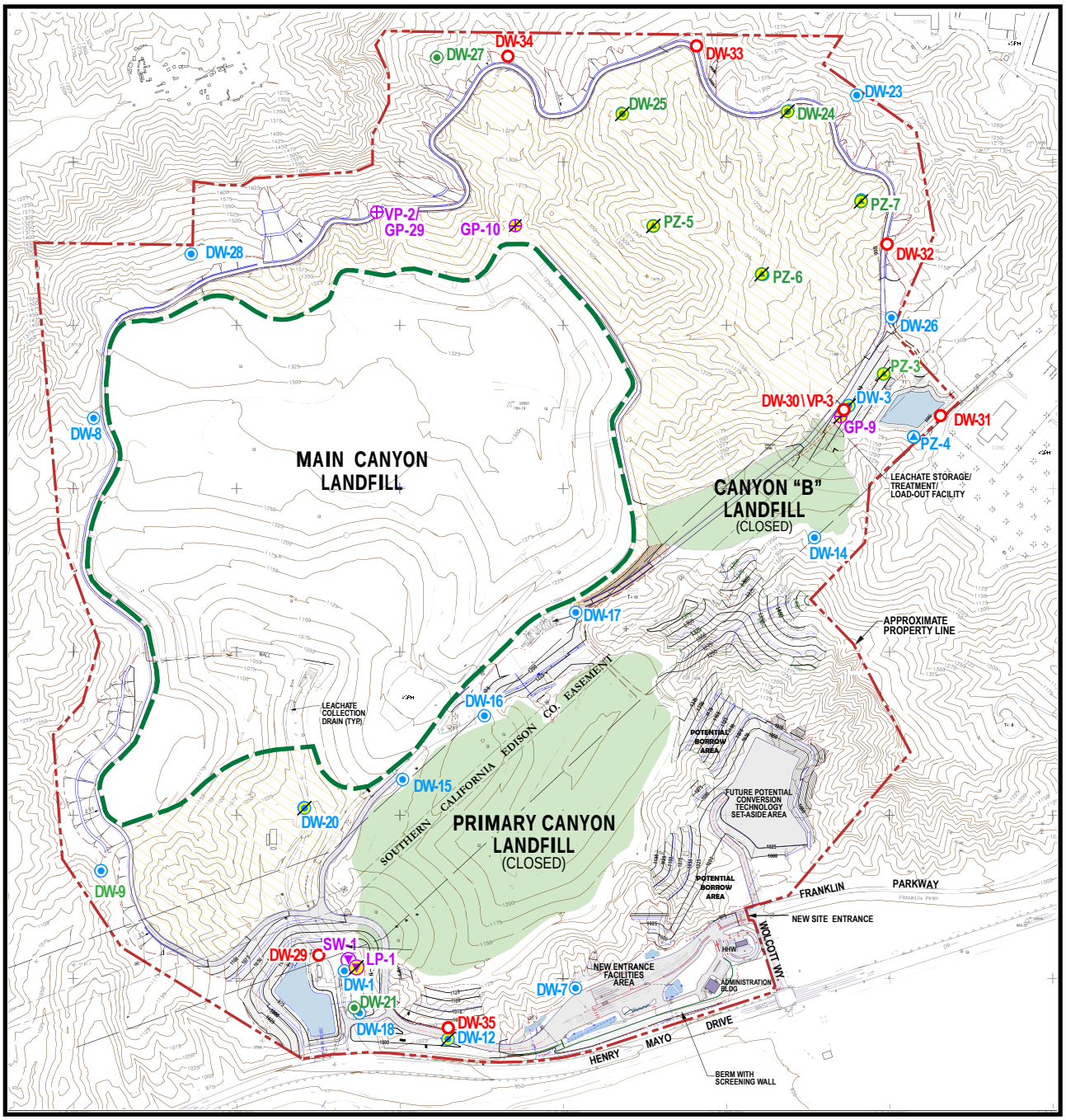
As required by RWQCB, all drilling, soil sampling, logging, well construction, and development is conducted under the direction of a California-registered professional geologist. A California-licensed drilling company will drill, construct, and develop the monitoring wells.

Sampling, Analysis, and Reporting Requirements

The current monitoring parameters, sampling, and analysis procedures will be continued for the expanded monitoring program. Procedures and techniques for groundwater sample collection, chemical analysis, and chain-of-custody control will be performed as specified in the groundwater monitoring program approved by RWQCB. In conjunction with the Proposed Project, sampling and reporting will be semiannual, if approved by RWQCB. After RWQCB approval, the MRP will be continued until modified or terminated.

The current monitoring parameters, sampling and analysis procedures, and reporting schedules to be followed are described below:

- Groundwater and vadose zone samples are collected and analyzed quarterly at a state-certified analytical laboratory. Constituents of concern (COC) are analyzed every 5 years with the next COC event scheduled for the fourth quarter of 2016. Procedures and techniques for groundwater and vadose zone sample collection, chemical analysis, and chain-of-custody control are performed as specified in the groundwater monitoring program approved by RWQCB. The groundwater and vadose zone samples are analyzed in accordance with accepted quantitative analytical procedures. Only laboratories certified by the California Department of Health Services perform the analytical work.
- In addition to collecting groundwater samples from the monitoring wells, other tasks are performed for a typical monitoring event. These tasks include measuring the depth to water in each well, performing and documenting quality assurance/quality control procedures, and visually inspecting the wells to see that they are in proper working order. Groundwater flow at the landfill is evaluated based on the water levels measured in the wells. A potentiometric surface map is constructed, and the groundwater flow direction and gradient are estimated.
- Monitoring reports are submitted to RWQCB semiannually: in June for the January-to-June period, and in December for the July-to-December period. An annual report is submitted in March.



LIMIT OF PERMITTED LANDFILL
CLOSED PERMITTED LANDFILL AREA
PROPOSED PROJECT LATERAL EXPANSION

GROUNDWATER MONITORING NETWORK

DW-14 GROUNDWATER MONITORING WELL
DW-29 PROPOSED GROUNDWATER MONITORING WELL
PZ-4 PIEZOMETER

VADOSE ZONE MONITORING NETWORK

SW-1 VADOSE WELL
GP-9 LANDFILL GAS MONITORING PROBE

GROUNDWATER ELEVATION MONITORING NETWORK

DW-9 GROUNDWATER WELL

WELL, PIEZOMETER OR PROBE TO BE DECOMMISSIONED

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Feet

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Monitoring Locations Source:
R.T. Frankian & Associates

FIGURE 2-8
Proposed Groundwater Quality Monitoring System
Chiquita Canyon Landfill
Master Plan Revision

Source: Golder Associates, 2014

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2.2.9.3 Leachate Monitoring

Consistent with Title 27, and the WDRs and MRP for CCL, the existing LCRS is monitored by periodic observation and sampling of collected leachate. The existing leachate monitoring program will continue to be in effect for the Proposed Project.

The landfill liner system is designed to contain leachate that may accumulate in the landfill and direct it to an LCRS sump or storage tank. The LCRS at CCL is a gravity system, with the main leachate collection pipe sloping toward a collection point or a storage tank. The Proposed Project will add one leachate collection point in the East Canyon area. However, because leachate tanks are a mobile facility that move as cells are developed, the location of the proposed tank will likely change over time. The leachate collection point at the southerly boundary of the existing permitted landfill will be relocated down canyon.

The collected leachate will continue to be transported offsite regularly for disposal. Leachate is collected and evaluated annually for COCs specified for groundwater monitoring. The leachate samples will be analyzed in accordance with accepted quantitative analytical procedures. Only laboratories certified by the California Department of Health Services will perform the analytical work. If collected leachate meets reuse requirements contained in the WDRs established by WDR Order No. 98-086 (or as amended or issued in the future), CCL may use it for dust control at the landfill on a lined module equipped with an LCRS. Otherwise, leachate can be either treated onsite or transported offsite to an approved facility for disposal. If the leachate is determined to be hazardous, a licensed hazardous waste hauler will transport it to an approved treatment and disposal facility. CCL conducted a pilot scale test program to determine the technical feasibility and cost-effectiveness of treating leachate onsite for reuse as dust control water and found that onsite treatment and reuse is not technically feasible or cost effective. The WDRs for CCL allow the use of leachate onsite only if it is treated to near drinking water quality. If the WDRs for CCL are revised such that onsite treatment or reuse of leachate is feasible, CCL would use leachate onsite for dust control in a lined module equipped with an LCRS.

Currently 2-3 trucks of leachate per day are transported offsite to one of two waste water plants for treatment: Southern California Waste Water in Santa Paula, CA, and South West Processing in Vernon, CA. The Department of Transportation regulates the transport of waste water on the highway, while the waste water plants are regulated by the applicable City or County for the discharge of industrial waste water, by the applicable Air Pollution Control District or Air Quality Management District, by the applicable City or County for a conditional use permit, and by the California State Resources Control Board for management of storm water.

2.2.9.4 Surface Water Monitoring

The Proposed Project will continue to implement the existing surface water monitoring program, including compliance with the existing CCL Stormwater Pollution Prevention Plan (SWPPP), the Stormwater Monitoring Program (SWMP), and the Spill Prevention, Control, and Countermeasure (SPCC) Plan, as described below.

The MRP requires stormwater monitoring consistent with the requirements of Water Quality Order No. 97-03-DWQ (Waste Discharge Requirements for Discharge of Storm Waster Associated with Industrial Activities Excluding Construction Activities), adopted by the California State Water Resources Control Board under the National Pollutant Discharge Elimination System General Permit No. CAS000001, as well as the SWPPP for the site. The purpose of the SWPPP is to identify stormwater control methods that reduce site erosion and pollutant transport from landfill operations. The SWPPP was also used in developing the SWMP for CCL. The SWMP has four objectives: (1) to monitor the quality of stormwater discharges, (2) to evaluate changing conditions and practices at the site to control pollutants in stormwater discharges, (3) to aid in the implementation of the SWPPP, and (4) to measure the effectiveness of best management practices, mandated by the state, in removing pollutants in stormwater discharge.

In addition to the SWPPP and SWMP, CCL has a SPCC Plan. The SPCC Plan was prepared pursuant to Title 40, Part 112 of the *Code of Federal Regulations* and establishes the procedures and equipment required to prevent discharge of oil and hazardous substances in quantities that violate applicable water quality standards. The SPCC Plan also establishes the activities required to mitigate such discharges if they occur.

Stormwater discharge from the site will continue to be sampled and analyzed in a manner consistent with the monitoring program outlined in the SWPPP and SWMP. Stormwater discharge samples will be analyzed for ammonia, biochemical oxygen demand, cyanide (total), nitrate and nitrite nitrogen, hydrogen ion concentration (pH), phosphorous (total), total suspended solids, specific conductance, oil and grease, volatile organic compounds, sulfate, chemical oxygen demand, total dissolved solids, and the following metals (total): antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, magnesium, mercury, nickel, selenium, silver, thallium, and zinc.

2.2.9.5 Air and Landfill Gas Monitoring

The owners or operators of all municipal solid waste landfill units must implement routine LFG monitoring programs. The monitoring program is based on site-specific factors, including soil conditions, hydrogeologic and hydraulic conditions, and the location of facility structures and property boundaries. The air and LFG monitoring program for CCL will continue in effect for the Proposed Project. The area to be monitored and the number of monitoring points increase with the larger landfill footprint. The monitoring program is described in further detail below.

CCL has extensive LFG collection systems designed and operated in compliance with SCAQMD Rule 1150.1 requirements for control of LFG emissions, EPA New Source Performance Standards/Emission Guidelines, and Landfill Methane Capture regulations. These LFG collection systems effectively eliminate the pressure gradients that could result in gas migration through the cover soil and underlying soils.

All landfill areas are monitored regularly to detect onsite LFG surface emissions or subsurface migration of LFG. In accordance with SCAQMD Rules and EPA regulations, CCL has a site-specific Rule 1150.1 Compliance Plan, and has a Title V permit issued by SCAQMD. The Rule 1150.1 Compliance Plan requires CCL to evaluate the performance of the LFG collection and control system by monitoring monthly for the emission or migration of LFG from the landfill. Other parts of the Title V permit place performance standards and testing requirements on the LFG flare.

In addition to the SCAQMD requirements, Title 27 requires all landfills to have an approved LFG monitoring plan that includes multi-level LFG monitoring probes around the site boundary. CCL has a Title 27 LFG monitoring plan approved by the LEA and CalRecycle. Monitoring is performed in a manner consistent with this Title 27 LFG monitoring plan.

LFG monitoring activities in Title 27 and Rule 1150 include:

- Monthly monitoring of perimeter probes to evaluate subsurface offsite migration
- Continuous onsite facility monitoring to evaluate potential buildup of LFG in onsite confined spaces
- Monthly instantaneous landfill surface monitoring to evaluate potential emissions on the landfill surfaces
- Quarterly integrated landfill surface monitoring to evaluate potential emissions on the landfill surfaces
- Ambient air sampling at the landfill site boundaries to evaluate the potential offsite migration of landfill emissions
- LFG sampling to evaluate the quality and components of the LFG being generated
- LFG collection and control system inspections to evaluate the efficiency and performance of the systems, including annual source tests of the control system
- Quarterly and annual reporting to present the results of the preceding activities to the SCAQMD for review

The entire LFG emissions and migration monitoring program is designed for CCL to identify emissions or migration of LFG at the earliest possible moment. This compliance program requires CCL to mitigate or correct any such identified emissions or migration in a timely fashion, and to reinspect the suspect area within a stated time period to confirm attainment of the standards.

Currently, there are 25 perimeter LFG monitoring probes. Some of the probes are included in the SCAQMD monitoring program, some of the probes are included in the Title 27 monitoring program, and some are included in both. With development of the Proposed Project, existing monitoring probes GP-9, GP-10, GP-11, GP-12, GP-24, GP-25, GP-A, and W-2 will be abandoned. New perimeter monitoring probes will be installed to monitor the potential for gas migration east and north of the East Canyon and within the property boundary. Nine additional multi-level monitoring probes (GP-27 through GP-35) will be installed along the eastern and northern boundaries of East Canyon as shown in Figure 2-9. Prior to decommissioning existing perimeter gas monitoring probes and installation of replacement gas monitoring probes for the purposes of compliance with Title 27, approval will be obtained from the LEA and CalRecycle.

EPA has issued a rule requiring certain facilities, including landfills, to monitor and report greenhouse gas (GHG) emissions. The rule became effective January 1, 2010. The new rule requires a monitoring plan that identifies the key individuals collecting the data, data collection methods, calculation procedures, quality assurance protocols, equipment logs, and repair procedures. The Proposed Project will implement the existing GHG monitoring plan and will monitor and report GHG emissions as required by the rule.

In addition to the EPA GHG monitoring and reporting rule, the California Air Resources Board (CARB) has adopted regulations requiring the reporting of GHG emissions from certain facilities, including LFGTE facilities. Reports are required following 1 year of operation and annually thereafter. The SCAQMD has incorporated the regulations into Rule 1150.1. The Proposed Project will comply with these regulations and submit a monitoring report after 1 year of operation of the extended landfill facilities.

2.2.9.6 Nuisance and Health Hazard Monitoring

The existing nuisance, health hazard monitoring, and community outreach programs, described below, will continue in effect for the Proposed Project.

Odor

There are two potential sources of odor from landfill operations: aerobic (with air) decomposition of incoming organic waste, and gases produced by anaerobic (without air) bacterial digestion of buried waste.

Odors may result from incoming waste after it is emptied from the truck and before it is completely covered in the landfill. Any resulting odor is from the aerobic decomposition of organic waste materials. Most of the organic matter that enters the landfill, including cooked and uncooked foods and garden wastes, has begun to decompose before being delivered to the landfill. These wastes are aggressively managed to minimize odors potentially leaving the landfill area during the day.

The odors from the aerobic decomposition of waste will continue to be controlled through the sanitary landfill method of disposal. The process of covering the waste significantly reduces odors. The surface area of the active disposal area over which waste is spread is minimized to control odor. This is accomplished by covering the waste at least daily with a layer of compacted soil or alternative daily cover. CCL covers portions of the working face multiple times during the day to minimize the potential escape of odors. Any odors that are produced before covering are typically at low levels and are dispersed into the atmosphere with little or no impact. Atmospheric conditions may occasionally occur in which odors reach sensitive receptors.

Anaerobic digestion of the buried waste produces LFG, the second source of odor. LFG consists primarily of carbon dioxide and methane, which are generally odorless, as well as trace amounts of volatile organic gases, which contain odors. As these natural gases are produced within the landfill, internal pressures move the gases along the paths offering the least resistance, which can be vertically through a permeable cover.

Odor problems may occur when cracks develop in the landfill surfaces due to landfill settlement or drying of cover soils, which allow the gases to escape into the environment. To prevent the release of odor-causing gases, an extensive LFG collection and control system (GCCS) has been installed at CCL. The collected LFG is either used as fuel in the onsite power plant (LFGTE plant) or combusted in a LFG flare. Landfill surfaces are monitored regularly for evidence of gas emissions. When emissions are detected, they are corrected by

adjusting the GCCS or recompacting cover soils, or both. Proper maintenance of the soil cover (e.g., repairing any cracks) and the GCCS are proven to be effective at controlling LFG odors.

In addition to the proper management of trash at the landfill working face, maintenance of the soil cover, and operation of the GCCS, potential odors are also controlled by several other means. CCL has a landfill perimeter odor control system that is used to neutralize odors before they migrate offsite due to wind direction. The landfill perimeter odor control system consists of a meteorological station located on the western boundary of the landfill that provides real-time information on wind speed and wind direction, plus a system of pipes and nozzles attached to the litter fence that is located along the western and northern boundaries of the waste disposal area. When the combination of weather conditions and odorous loads have the potential to result in offsite migration of odors, CCL disperses odor neutralizing agents through the nozzles. Large fans that can move nearly 1 million cubic feet per minute of air are also strategically placed on the landfill to disperse odors. However, the most effective method used to control odors from incoming trash is CCL's waste exclusion program. CCL selectively chooses to exclude trash loads from specific locations and on specific days of the week if there is a history of highly odorous loads.

During compost processing, odors are controlled by maintaining aerobic conditions in the windrows where yard waste is deposited for composting. The compost windrows are monitored for temperature, oxygen content, and moisture on a daily basis to provide odor and process control.

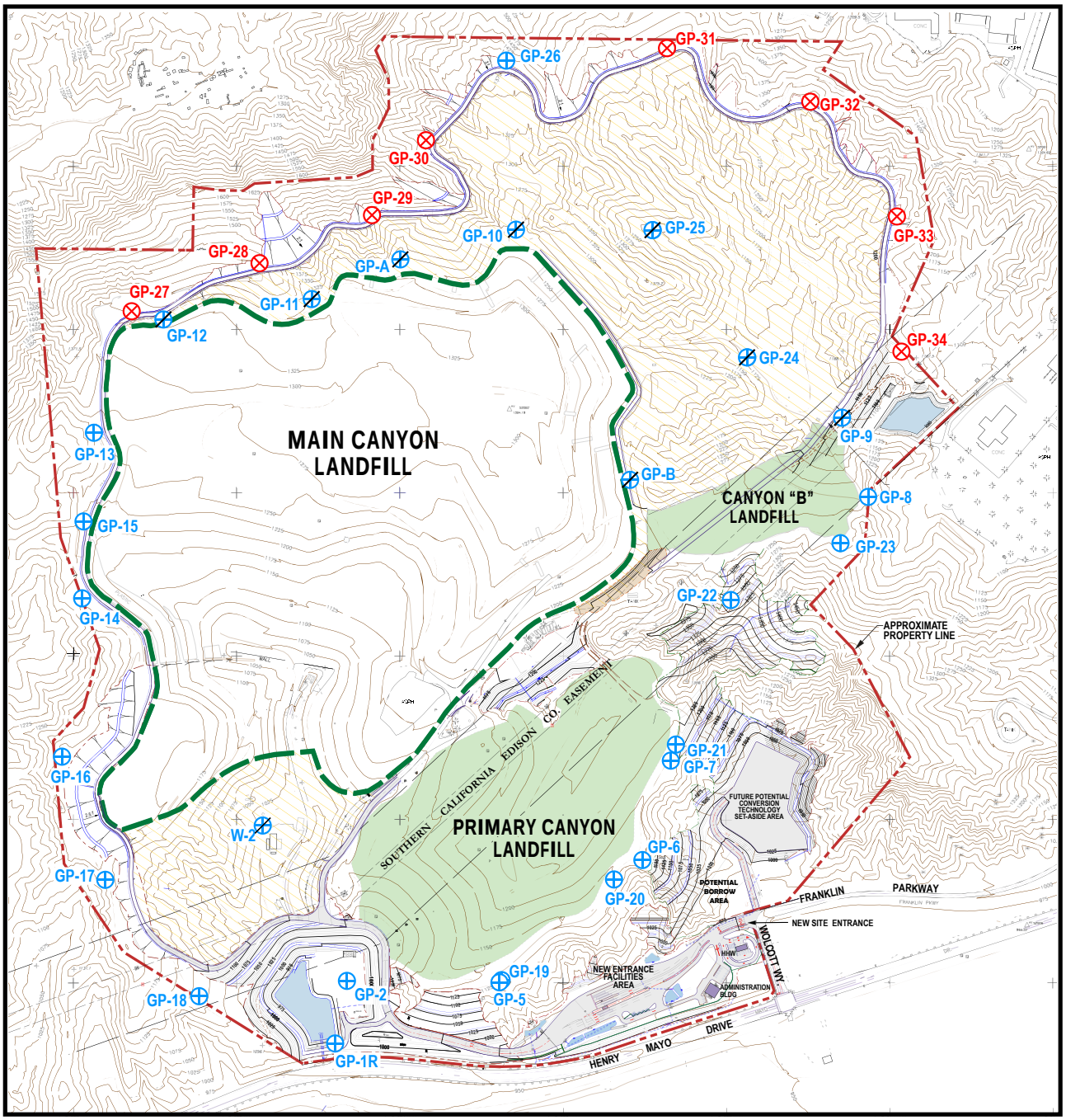
Fire Control

CCL is located within Los Angeles County Fire Zone No. 4, which is a rugged, undeveloped area covered with chaparral, sage scrub, and non-native grassland. These vegetation communities can provide a heavy fuel-load fire hazard when mature. The climate of the region is characterized as Mediterranean. Winters are generally cool and moderately wet, while summers tend to be hot and dry. The area receives an average annual precipitation of 13 to 14 inches. The period of concern is during the summer and fall months when soil moisture is reduced and periods of Santa Ana winds combine with extremely low humidity occur.

Although very infrequent, the most common cause of a fire at a landfill is the dumping of a "hot load" or the spontaneous combustion of waste materials. Hot loads occur when people dispose of smoldering materials (e.g., coals) in their trash. That material is then transported to the landfill in a collection vehicle, and is re-ignited when dumped from the truck and exposed to air. If a hot load is received, the waste is deposited in a safe area and extinguished. If a hot load has been placed in an active face, the burning waste is immediately excavated, spread, and extinguished. These types of small fires are easily extinguished by landfill personnel using water and/or soil. These situations do not typically require the assistance of the Los Angeles County Fire Department.

Landfill fires can also result when uncontrolled LFG is ignited by an external source. LFG contains methane, which is combustible when mixed with a specific amount of air and exposed to an external ignition source (e.g., a spark or flame). LFG mitigation is controlled at CCL by the landfill liner, landfill cover, and the GCCS that operates 24 hours a day, 7 days per week. Therefore, the risk of a fire associated with LFG is minimal. However, in the event of a subsurface fire, the following actions would be taken:

1) the portion of GCCS of concern would be shut down along with any wells in the area;
2) water would be applied to the area and a dozer would track and pack the soil in place;
3) more soil would be added and watered and tracked again;
4) the impacted area and vicinity would be monitored for a period of several days or weeks to confirm corrective action success.



LEGEND

- LIMIT OF PERMITTED LANDFILL
- CLOSED PERMITTED LANDFILL AREA
- PROPOSED PROJECT LATERAL EXPANSION
- GP-9 EXISTING LANDFILL GAS MONITORING PROBE
- GP-27 PROPOSED LANDFILL GAS MONITORING PROBE
- EXISTING LANDFILL GAS MONITORING PROBE TO BE DECOMMISSIONED

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Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Monitoring Locations Source:
R.T. Frankian & Associates

FIGURE 2-9
Proposed Landfill Gas Monitoring System
Chiquita Canyon Landfill Master Plan Revision

Source: Golder Associates, 2014

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CCL will comply with applicable Los Angeles County Fire Department regulations. CCL will work closely with the fire department during development of the final site plan for CCL and when obtaining building permits for the new entrance facilities.

Fire prevention for landfill equipment and vehicles is provided by frequent cleaning of the equipment to remove combustible material. This involves removing debris and dust from undercarriages and engine compartments, regular washing of equipment, and checking for and repairing oil and fuel leaks. In addition, all of the heavy equipment that routinely operates in the trash has a built-in fire suppression system that automatically detects and extinguishes equipment fires. Also, portable fire extinguishers are carried in all landfill equipment and vehicles. The entrance facilities and maintenance buildings are also equipped with fire extinguishers suitable for extinguishing any minor fires and for maintaining personnel safety.

CCL currently maintains mobile firefighting equipment onsite 24 hours a day, 7 days per week. This equipment currently includes one 10,000-gallon water wagon, two 4,000-gallon water trucks, and four bulldozers. CCL has about 150,000 gallons of onsite water storage in various water storage tanks located throughout the site. Two of the tanks are connected to fire hydrants at the administrative office and the maintenance shop. Additionally, the water line from the Valencia Water Company tanks on the north end of the site has the ability to supply 50,000 gallons of water per hour and is equipped with multiple fire hydrants along the line.

As previously stated, minor fires that may occur in a waste fill are extinguished by landfill personnel using appropriate landfill equipment, stockpiled soil cover, and when necessary, a water truck. The Los Angeles County Fire Department is summoned if landfill personnel are unable to control and extinguish a fire or if specialty firefighting techniques are necessary.

Fire protection service for CCL is provided by the Los Angeles County Fire Department. CCL is within the area served by Station 76 at 27223 Henry Mayo Drive in Valencia. Station 76 is approximately 2.5 miles east of CCL, with an average response time of approximately 3 to 4 minutes (Hernandez, pers. comm., 2010).

In past fire seasons, CCL has been identified by Cal Fire and the Los Angeles County Fire Department as a resource to assist them during the fire season. Having a large open area, CCL could be used as a staging area for firefighting crews or as a landing area for helicopter assets. In addition, the 150,000 gallons of onsite water storage is also a resource for fire crews.

Dust Control

Landfill operations have the potential to create dust and are subject to SCAQMD Rule 403. Dust can be generated from earthwork, travel on unpaved roads, unloading trash from vehicles, and wind erosion of soil surfaces. CCL has a plan to mitigate fugitive dust emissions in compliance with SCAQMD Rule 403. Fugitive dust is controlled at CCL by paving permanent access roads, proper maintenance of haul roads (grading and watering), and frequent application of fine water spray or dust palliatives on soil-covered work areas, excavation areas, and stockpile areas, where conditions may cause the formation of fugitive dust. Controls also include timely placement of intermediate and final cover over the waste fill, application of water to intermediate soil cover when conditions might cause recurrent problems with fugitive dust; and maintenance of vegetative cover on completed fill slopes.

Additional dust control measures implemented at CCL include limiting onsite vehicle speed; directing onsite traffic by the most direct route possible; surfacing temporary unpaved onsite haul roads with low dust materials (e.g., rock material); applying mulch to inactive areas where soil has been disturbed and/or to any other unvegetated areas; requiring covers on all inbound and outbound trucks; replacing ground cover in disturbed areas as quickly as possible; and using street sweepers on paved onsite haul roads and SR-126 on a daily basis.

Vector Control

A properly operated landfill does not present health hazards to adjacent land users because the sanitary landfill method minimizes the conditions for attracting or allowing the breeding of potential disease carriers such as birds, rodents, and flies. There is no history of vector problems or vector complaints at CCL.

Seagulls attracted to exposed waste are the primary vector control focus at CCL. The seagull population at the landfill varies during the summer and winter months. During the winter months (November through April), seagulls are generally present at the landfill. In the summer months (May through October), however, the seagull population is minimal to non-existent. No bird complaints have been received from waste haulers or adjacent landowners, and when present, site users and personnel do not consider the birds to be a nuisance or a problem.

Falcons are the primary method used to deter seagulls at CCL during active disposal operations. The falcons are not predatory, but their presence frightens the seagulls. When frightened, the birds take flight and are deterred from access to the exposed waste at the working face. When the falcons are not present, site personnel have the option to utilize a handheld device to launch whistling projectiles specially designed to frighten the birds without the risk of injuring them. These operational practices minimize the opportunities for birds to feed at the site, which minimizes bird populations, thus mitigating problems in the vicinity of the site. The use of falcons and other vector control measures also discourage scavenging by other nuisance birds, such as cowbirds and starlings.

The work area over which waste is spread is minimized, and the waste is properly compacted and covered each day. Thoroughly compacting the incoming wastes, covering wastes, and minimizing the work area over which waste is spread prevents the emergence of flies from eggs that are normally present in household waste. Fly problems have not existed at CCL.

Rodents normally cannot survive because the compaction and covering of waste eliminates both habitat and food. Site personnel frequently inspect site areas for signs of rodent activity. Rodent problems have not existed at CCL. If such activity is observed, site personnel will contact pest control specialists for professional advice and any services needed to ensure that a rodent nuisance does not develop.

Litter

Operation of a sanitary landfill has the potential to increase the presence of litter in and around the site. Moderate winds can distribute lightweight waste such as paper and plastic over quite a large area. Two sources of litter result from the operation of the landfill; litter can escape from the trucks entering or exiting the site, and litter can be blown off the working face of the landfill.

CCL has an ongoing litter collection and tarping program to minimize litter in active areas and areas surrounding the site. Currently, portable and stationary litter control fences are utilized near the landfill working face. CCL personnel regularly patrol the landfill access road and perimeter and pick up litter blown from the site during high winds. All debris found on or along the entrance and access roads is removed as soon as possible. Temporary personnel are also hired, as necessary, to pick up litter. Additionally, CCL personnel patrol SR-126 near the landfill entrance on an as-needed basis, collecting illegally or inadvertently dumped waste. CCL is a sponsor of the Adopt-A-Highway program for approximately 3 miles of SR-126, from I-5 to Chiquito Canyon Road, as part of the Caltrans highway litter cleanup program.

Before leaving the landfill, open-bed trucks are required to either be swept clean of loose debris or covered with a tarp to minimize litter along SR-126. CCL has also instituted a tarping program that requires all incoming loads to be tarped. Improperly tarped loads are generally not a problem at CCL, but CCL is permitted by Condition 21 of the existing CUP to sell tarps to offenders, enforce punitive fines to offenders, and exclude repeat offenders from the landfill. Appropriate signs are posted at the site entrance notifying customers of the tarping requirements. Untarping is only allowed in the vicinity of the working face.

Condition 20 of the existing CUP includes policing a stretch of Chiquito Canyon Road from SR-126 to the entrance of Val Verde at Rancho Avilos for litter at a minimum of once per month, and providing quarterly free cleanup days to residents of Val Verde.

Litter is generally limited to the working face and slopes around the working face within the landfill's boundary. Typical landfill operations, such as compacting waste immediately after disposal and minimizing the working face, have limited the occurrence of fugitive litter.

Noise Control

The primary noise sources at CCL are the heavy equipment operating in the landfill and disposal trucks that deposit waste at the active face daily. Sound levels of onsite equipment are minimized through a vehicle maintenance program, which among other goals, ensures mufflers are properly maintained. Additionally, site topography aids in containing sound related to landfill operations within the limits of the site boundary. Offsite sound levels have not been a problem evidenced by the lack of any filed complaints with the LEA or LADRP.

The closest noise sensitive area is the rural residential community of Val Verde, which, at its closest point, is approximately 500 feet as the crow flies from the property boundary and approximately 0.50 miles from the existing landfill activities. The Val Verde community is separated from the landfill by a significant ridgeline which blocks the line of sight and serves as a very effective noise barrier. This feature will not change as a result of this project. Noise generated at CCL was not noticeable in Val Verde.

2.2.10 Household Hazardous Waste Facility

A Household Hazardous Waste Facility (HHWF) will be constructed at CCL. While the facility will be located in the same area as the new landfill entrance and support facilities, the HHWF will be physically separate from the landfill and will have its own entrance and exit. The HHWF will be a joint effort between CCL and Los Angeles County. CCL will design and construct the HHWF; the County will permit and operate the facility.

The HHWF will be constructed and permitted to receive the following general materials:

- Household Hazardous Waste: paint and solvents; used motor oil and filters, anti-freeze, and other automotive fluids; cleaning products; pool and garden chemicals; aerosol cans; all medicine except controlled substances; auto batteries; household batteries

The HHWF would receive and store these materials in preparation for shipment to markets that would recycle the materials or shipment to a hazardous waste disposal site. Materials would be stored in quantities considered acceptable to the State Department of Toxic Substances Control. The HHWF will include areas for receiving, sorting, consolidation, and packing. The total area of the facility will be approximately 2,100 square feet. Secondary containment would be provided by sloped surfaces within the storage bays, a containment trench in the front of each storage bay, and concrete/masonry barriers around three sides of the storage bays. Facility personnel will inspect loads to determine whether the materials received are one of the recyclable HHW specified in Section 25218.8(b) of the California Health and Safety Code. Figure 2-1 shows the location of the HHWF within the new entrance area, while Figure 2-10 illustrates the HHWF layout.

Operating hours for the HHWF will be 24 hours per day, 7 days per week, for purposes of processing materials, operating equipment, and/or maintaining the facility. Delivery of material to the HHWF by members of the general public will be limited to 6:00 a.m. to 8:00 p.m., 7 days per week. However, actual operating hours for the HHWF would be set by the County, and are anticipated to be one or two weekend days per month. The HHWF will be staffed continuously during operation by an individual trained in hazardous materials management.

Operation of the HHWF will be managed in accordance with state hazardous waste laws, specifically Title 22 of the California Code of Regulations Chapters 23 and 26, and Section 25218 of the California Health and Safety Code. The HHWF would also be required to obtain:

- Health Permits for Storage of Recyclable Hazardous Materials from the Los Angeles County Health Department
- Hazardous Waste Identification Number from the State Department of Toxic Substances Control
- Finding of Conformance from the Los Angeles County Solid Waste Management Committee/Integrated Waste Management Task Force
- Air Quality permit from the South Coast Air Quality Management District

2.2.11 Mixed Organics Composting Facility

The Proposed Project includes continued green waste processing and composting operations allowed under the current CUP. The processing and composting operation that was located at the landfill since 1997 suspended operations in 2009 as a result of the economic downturn. Although it is currently inactive, CCL intends to resume operation in some manner in the future, likely in late 2014 or early 2015.

When it resumes operation, the facility is likely to be located on the landfill surface. As the landfill develops, the composting facility may be relocated periodically to accommodate landfill operations. The composting facility is permitted under the current CUP to receive up to 560 tons per day. The vehicles associated with 560 tons per day have been accounted for in the traffic analysis for the Proposed Project. The composting facility permitted in the current CUP is a green material composting facility; no food waste or sewage sludge is included. The green material is ground in a tub grinder and then formed into windrows. Windrows are turned periodically to prevent the windrows from becoming anaerobic. Water is added, as necessary, to maintain the proper moisture content. The composting material is typically kept in the windrows for 30 to 90 days. When the desired level of composting has been achieved, the compost material is moved to the curing area and formed into curing piles. The cured compost is screened to remove any large particles. The finished product is then transported offsite for sale or used onsite for erosion control. Small quantities are available to the general public at a steeply discounted price. The current CUP allows for either an open, “windrow system” as was previously employed, or an “in-vessel system”.

The feedstock for the composting operation under the current CUP is limited to shredded green waste, and prohibits waste water biosolids (sludge or sludge components). In addition to shredded green waste from curb-side pick up or commercial landscape operations, the Proposed Project would also include pre- and post-consumer food waste as part of a “mixed organics” composting process and may also include a “static pile system”.

A diversion berm designed to handle runoff from a 24-hour, 25-year storm will be installed on the up-gradient side of the composting area to divert storm water around the area. Storm runoff and excess liquid from the composting process from this area will flow to the site drainage system.

Operating hours for the composting operation will be 24 hours per day, 7 days per week. Access by customers for purposes of removing finished mulch biomass fuel, and compost will be limited to 6:00 a.m. to 8:00 p.m., 7 days per week, although actual hours may vary within this window.

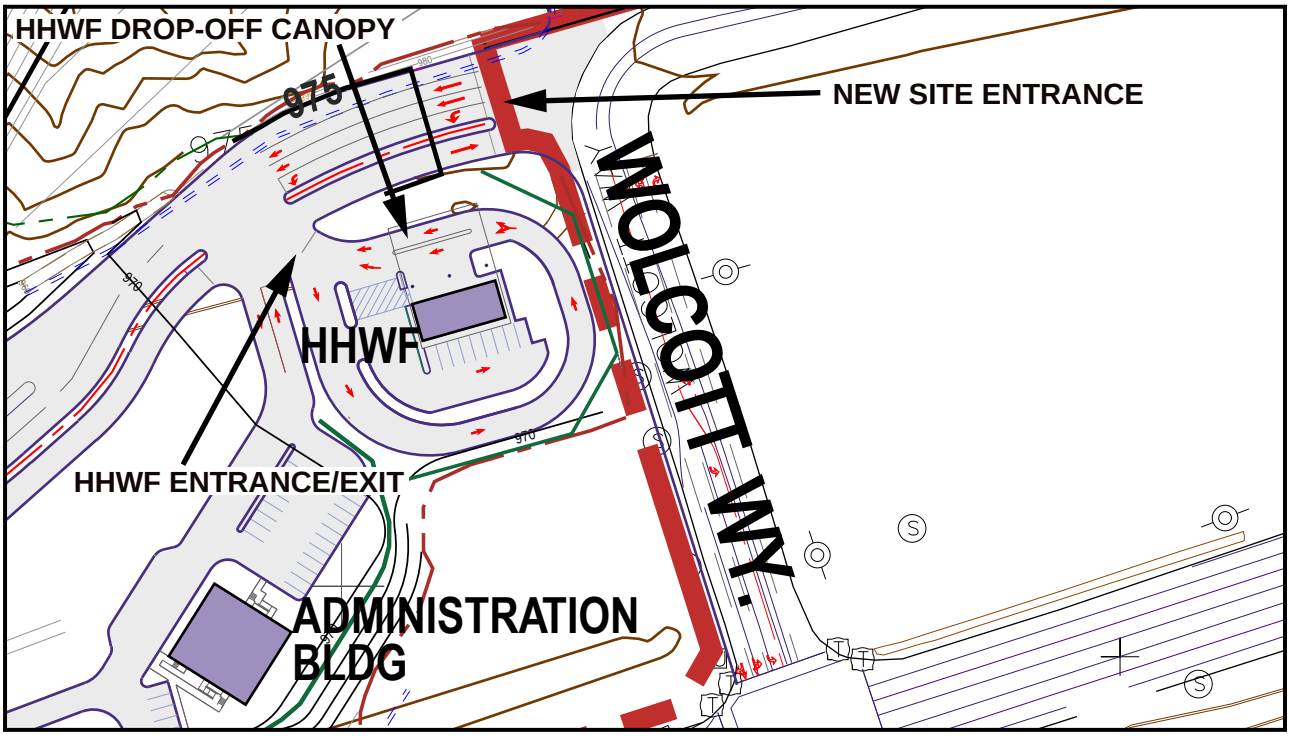


FIGURE 2-10
Household Hazardous Waste Facility Layout
Chiquita Canyon Landfill Master Plan Revision

Base compiled by photogrammetric methods by
Don Read Corporation, Brea, CA
Date of photography: April 6, 2010

Source: Golder Associates, 2014

CH2MHILL

2.2.12 Land Set-Aside for Potential Future Conversion Technology Facility

Los Angeles County is actively evaluating and promoting the development of conversion technologies to address the region's solid waste challenges. Development of in-County, commercial scale conversion technology facilities is a priority element in the County's component strategy for assuring long-term disposal capacity to meet the needs of Los Angeles County's over 10 million residents and thousands of businesses county-wide. Conversion technologies are non-combustion thermal, mechanical, and biological processes that convert post-recycled residuals (materials that would otherwise be sent to landfills) into green fuels like ethanol and biodiesel, clean renewable energy, and other marketable products.

CCL has included within the Project Description a set-aside of a portion of the site within the existing CCL property boundary that could be used for a potential future conversion facility. The location of the property set-aside is shown in Figure 2-1. Conceptual grading required for a conversion facility is shown in Figure 2-3, as well as the location of a road that would provide access to the facility from the site entrance. The Proposed Project does not include design, permitting, construction or operation of a conversion facility.

In its Six-Month Status Update: April 2013 through October 2013 to the Board Motion of April 20, 2010, Item No. 44 Conversion Technologies in the County of Los Angeles, the Los Angeles County Department of Public Works (LACDPW) provided a status update of the efforts LACDPW has undertaken to advance conversion technology development in the County. These efforts included:

- supporting the passage of legislation to advance conversion technologies in California;
- conducting a conversion technology survey with public and private stakeholders regarding legislative actions, regulatory changes, and incentives necessary to facilitate development of conversion technologies in California;
- issuing a Request for Expressions of Interest to technology vendors and financial firms for information to be included in the Los Angeles County Department of Public Works (LADPW) online database; and
- continuing technical and planning services and information to potential conversion technology projects located in the County.

Anaerobic digestion is a type of conversion technology "in which biodegradable organics are converted by a series of bacteria into compost, methane, and carbon dioxide" (http://www.socalconversion.org/technologies/definitions)." Anaerobic digestion is the biological decomposition of organic matter with little or no oxygen producing a biogas composed primarily of CO_2 and methane (though some systems can be operated to produce some hydrogen gas with less methane product). The anaerobic decomposition (not digestion) yielding methane process occurs naturally in marshes, and wetlands, landfills, ruminants, and certain insects. There are a variety of controlled systems where anaerobic decomposition technology is currently utilized in the United States including wastewater treatment facilities and dairy manure digesters and co-digesters. In other countries (primarily in Europe), Anaerobic Digestion technology is utilized to process and treat the organic fraction of municipal solid waste to recover energy and to reduce the volume of solid waste that must be landfilled. LADPW has indicated a general interest in an Anaerobic Digestion Facility that could be co-located at an existing solid waste management facility, in part because anaerobic digestion is complementary to traditional municipal solid waste disposal. For example, at a solid waste landfill facility such as CCL, green and food waste could be diverted from the landfill waste stream prior to disposal and then processed to create energy.

The California Department of Resources Recycling and Recovery, also known as CalRecycle, is the state agency responsible for statewide solid waste management and recycling programs. To assist in the siting and permitting of anaerobic digestion facilities in California, CalRecycle has prepared a Program Environmental Impact Report (EIR) for Statewide Anaerobic Digester Facilities for the Treatment of Municipal Organic Solid Waste. The Program EIR supports the CalRecycle Anaerobic Digestion (AD) Initiative, which includes a statewide strategic policy directive to reduce by 50 percent the amount of organic waste disposed in the state's landfills by 2020. The CalRecycle policy recognizes that organic wastes are a resource, not just solid

wastes that must be disposed. Organic wastes have an energy value that can be captured and utilized, and are also a necessary component of compost, soil amendments, and other useful products.

The Final Program EIR and associated background and guidance documents can be found on the CalRecycle website located here: http://calrecycle.ca.gov/SWFacilities/Compostables/AnaerobicDig/default.htm#EIR.

The Program EIR determined that on a program level all the impacts of AD facilities could be mitigated to a less-than-significant level with implementation of the mitigation measures. Individual projects could result in localized or site-specific impacts that would need to be analyzed in a tiered CEQA document.

The Program EIR examined the following potentially significant environmental impacts: Air Quality and Greenhouse Gas, Hydrology and Water Quality, Noise, Public Services and Utilities, Transportation, Aesthetics, Hazards and Hazardous Materials, and Other CEQA Considerations (such as Cumulative and Growth-Inducing Impacts, Significant and Unavoidable Environmental Impacts, etc.).

The following is a detailed summary of potentially significant impacts and mitigation measures identified in the CalRecycle Program EIR for AD facilities, with the numeric convention retained from the Program EIR:

Impact 5.1: Construction and operations of AD facilities within California would result in emissions of criteria air pollutants at levels that could substantially contribute to a potential violation of applicable air quality standards or to nonattainment conditions.

Measure 5.1a: Applicants shall prepare and submit an Air Quality Technical Report as part of the environmental assessments for the development of future AD facilities on a specific project-by-project basis. The technical report shall include an analysis of potential air quality impacts for all steps of the project (including a screening level analysis to determine if construction and operation [for all on-site processes, including any end-use and disposal methods] related criteria air pollutant emissions would exceed applicable air district thresholds, as well as greenhouse gas (GHG) emissions and any health risk associated with toxic air contaminants (TACs) from all AD facility sources) and reduction measures. Preparation of the technical report should be coordinated with the appropriate air district and shall identify compliance with all applicable New Source Review and Best Available Control Technology (BACT) requirements. The technical report shall identify all project emissions from permitted (stationary) and non-permitted (mobile and area) sources and mitigation measures (as appropriate) designed to reduce significant emissions to below the applicable air district thresholds of significance, and if these thresholds cannot be met with mitigation, then the individual AD facility project could require additional CEQA review or additional mitigation measures.

Measure 5.1b: Applicants shall require construction contractors and system operators to implement the following Best Management Practices (BMPs) as applicable during construction and operations:

- Facilities shall be required to comply with the rules and regulations from the applicable Air Quality Management District (AQMD) or Air Pollution Control District (APCD).
- Facilities shall require substrate unloading and pre-processing activities to occur indoors within enclosed, negative pressure buildings. Collected foul air (including volatile organic compounds (VOCs) off gassed from undigested substrates) should be treated via bio filter or air scrubbing system.
- Use equipment meeting, at a minimum, Tier II emission standards.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, §2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all equipment in proper working condition according to manufacturer's specifications.
- Use electric equipment when possible. For projects that are unable to use internal combustion engines due to air district regulations (i.e., NOx emission limits), other options for generating renewable energy from biogas should be considered. Other options that should be evaluated for using biogas or

biomethane as an energy source include: use as a transportation fuel (compressed biomethane), use in fuel cells to generate clean electricity, use for on-site heating, or injection of biomethane into the utility gas pipeline system. If there are other lower NOx alternative technologies available at the time of AD facility development, these should be considered as well during the facility design process.

Impact 5.2: Operation of AD facilities in California could potentially create objectionable odors affecting a substantial number of people.

Measure 5.2a: Applicants for the development of AD facilities shall comply with appropriate local land use plans, policies, and regulations, including applicable setbacks and buffer areas from sensitive land uses for potentially odoriferous processes.

Measure 5.2b: If an AD facility handles compostable material and is classified as a compostable material handling facility, the facility must develop an Odor Impact Minimization Plan (OIMP) pursuant to 14 CCR 17863.4. Otherwise, applicants shall develop and implement an Odor Management Plan (OMP) that incorporates equivalent odor reduction controls for digester operations and is consistent with local air district odor management requirements. These plans shall identify and describe potential odor sources, as well as identify the potential, intensity, and frequency of odor from these likely sources. In addition, the plans will specify odor control technologies and management practices that if implemented, would mitigate odors associated with the majority of facilities to less than significant. However, less or more control measures may be required for individual projects. Odor control strategies and management practices that can be incorporated into these plans include, but are not limited to, the following:

- Require substrate haulage to the AD facility within covered, liquid leak-proof containers.
- Establish time limit for on-site retention of undigested substrates (i.e., feedstocks should be processed and placed into the portion of the system where liquid discharge and air emissions can be controlled within 24 or 48 hours of receipt).
- Provide enclosed, negative pressure buildings for indoor receiving and pre-processing.
- Treat collected foul air in a biofilter or air scrubbing system.
- Establish contingency plans for operating downtime (e.g., equipment malfunction, power outage).
- Manage delivery schedule to facilitate prompt handling of odorous substrates.
- Handle fresh unstable digestate within enclosed building, or mix with green waste and incorporate into a composting operation within the same business day, and/or directly pump to covered, liquid leak-proof containers for transportation.
- Protocol for monitoring and recording odor events.

Impact 5.3: Construction and operation of AD facilities in California could potentially lead to increases in chronic exposure of sensitive receptors in the vicinity to certain toxic air contaminants from stationary and mobile sources.

Measure 5.3a: Implement Mitigation Measures 5.1a and 5.1b.

Measure 5.3b: Based on the Air Quality Technical Report (specified in Measure 5.1a), if the health risk is determined to be significant on a project-by-project basis with diesel particulate matter (DPM) as a major contributor, then the applicants shall implement control measures such that the AD facility health risk would be below the applicable air district threshold, which may include implementation of one or more of the following requirements, where feasible and appropriate:

- Use either new diesel engines that are designed to minimize DPM emissions (usually through the use of catalyzed particulate filters in the exhaust) or retrofit older engines with catalyzed particulate filters (which will reduce DPM emissions by 85%);

- Use electric equipment to be powered from the grid, which would eliminate local combustion emissions;
- Use alternative fuels, such as compressed natural gas (CNG) or liquefied natural gas (LNG).

Measure 5.3c: Hydrogen sulfide (H2S) contained in the biogas shall be scrubbed (i.e., via iron sponge or other technology) before emission to air can occur.

Impact 5.4: Development of AD facilities in California could increase GHG emissions.

Measure 5.4: Implement Mitigation Measure 5.1a.

Impact 5.5: Development of AD facilities in California, together with anticipated cumulative development in the area, would contribute to regional criteria pollutants.

Measure 5.5: Implement Mitigation Measures 5.1a and 5.1b.

Impact 6.2: The operation of AD facilities could adversely affect surface and groundwater quality.

Measure 6.2a: During pre-processing, all water that contacts digester feedstock, including storm water from feedstock handling and storage facilities and water from equipment washdown and feedstock wetting, shall be contained until appropriately disposed or utilized. Best Management Practices (BMPs) may be used to reduce loading of sediment, nutrients, trash, organic matter, and other pollutants. These BMPs may include, but are not limited to, trash grates and filters, oil-water separators, mechanical filters such as sand filters, vegetated swales, engineered wastewater treatment wetlands, settling ponds, and other facilities to reduce the potential loading of pollutants into surface waters or groundwater. All discharges of storm water are prohibited unless covered under the General Industrial Stormwater Permit, other National Pollutant Discharge Elimination System (NPDES) permit, or are exempted from NPDES permitting requirements. The NPDES permits will generally require implementation of management measures to achieve a performance standard of best available technology economically achievable (BAT) and best conventional pollutant control technology (BCT), as appropriate. The General Industrial Stormwater Permit also requires the development of a storm water pollution prevention plan (SWPPP) and a monitoring plan, in compliance with permit requirements. Other liquid and solid wastes may only be discharged pursuant to an NPDES permit or waste discharge requirement (WDR) order.

Measure 6.2b: In order to minimize the amount of fugitive trash or feedstock released to surface waters, the following measures shall be implemented. When feasible, the project proponent shall preferentially select feedstocks that contain minimal amounts of trash that could become entrained in surface water, either via direct contact with stormwater flows or via other accidental release, such as due to wind. Processing of such feedstocks may, however, be unavoidable, such as in support of an AD facility that processes MSW. Therefore, the project applicant shall ensure that (1) drainage from all feedstock loading, unloading, and storage areas is contained onsite or treated to remove trash and stray feedstock, and sediment prior to release as permitted; (2) in all feedstock loading and unloading areas, and all areas where feedstock is moved by front loaders or other uncovered or uncontained transport machinery, the applicant shall ensure that mechanical sweeping and/or equivalent trash control operational procedures are performed at least daily, during operations; and (3) the facility operator shall train all employees involved in feedstock handling so as to discourage, avoid, and minimize the release of feedstock or trash during operations.

Measure 6.2c: In order to minimize water quality degradation associated with accidental spills at AD facilities, the applicant for individual projects that would be implemented under the Program EIR shall require project proponents to complete and adhere to the requirements of a Spill Prevention, Control, and Countermeasure (SPCC) Plan, which is based on the federal SPCC rule. Notification of the SPCC Plan shall be provided to the local Certified Unified Program Agency (CUPA). The SPCC Plan shall contain measures to prevent, contain, and otherwise minimize potential spills of pollutants during facility operation, in accordance with U.S. EPA requirements. For individual projects that would utilize wet digestion systems, in which processing and holding tanks would contain the (aqueous) digestion reaction and liquid digestate containing fats and oils, the SPCC Plan shall provide for installation and monitoring of secondary containment and/or leak detection systems to

ensure that AD liquids are not accidentally discharged to navigable waters or adjoining shorelines. Monitoring of these systems shall be in accordance with SPCC Plan requirements.

Measure 6.2d: Any proposed discharge to a pond for an individual project would require the project applicant to acquire WDRs from the appropriate regional board. The project applicant shall ensure that all ponds and discharges to such ponds adhere to all requirements under applicable WDRs. The need for pond liners in order to protect groundwater quality would be assessed during the regional board's review of the project, and requirements for pond liners would be included in the WDRs, as warranted. If appropriate, the WDRs would impose requirements for Class II surface impoundments as presented in Title 27 of the California Code of Regulations. Requirements include, but are not limited to, groundwater monitoring, double liner systems with leachate collection, water balance, a preliminary closure plan for clean closure, seismic analysis, and financial assurances. Compliance with WDRs may require the installation of facilities such as tanks and containers to store and process the digestate, the use of filter presses, and implementation of other water quality protection practices.

Measure 6.2e: This measure would reduce potential for the movement of nutrients and other pollutants to groundwater and surface water for individual projects that would employ land application for liquid digestate or residual solids. The operators of individual projects implemented under this Program EIR shall ensure that land application of liquid digestate and/or residual solids adheres to all requirements of an anti-degradation analysis, and in some cases best practicable treatment and control to achieve salinity reduction in materials prior to discharge to land. WDRs would be issued by the appropriate regional board, and would consider site-specific conditions and waste characteristics, in order to determine applicable control measures and procedures that protect water quality.

Measure 6.2f: This measure would reduce the potential for water quality degradation from projects that include discharge of liquid digestate to surface waters. The applicant for individual projects implemented under this Program EIR shall ensure that the discharge of liquid digestate to surface waters adheres to all NPDES permitting recommendations and requirements, as established by the appropriate regional board. Specific measures may include, but are not limited to, limitations on discharge volumes, seasonal discharge restrictions, limitations on loading rates and/or concentrations of specific constituents, and other facility-specific water quality control measures designed to protect receiving water quality and preserve beneficial uses identified in Basin Plans.

Impact 6.3: AD facilities could be exposed to flooding hazards.

Measure 6.3: Individual applicants seeking coverage under this Program EIR shall ensure that, for their proposed AD facilities including pre-processing areas, feedstock storage areas, and digestate handling facilities, are protected from FEMA-defined 100-year flood events. Design measures may include, but are not limited to: facility siting, access placement, grading, elevated foundations, and site protection such as installation of levees or other protective features.

Impact 6.4: Construction of AD facilities could change drainage and flooding patterns.

Measure 6.4: In order to ensure that the AD facilities would not result in detrimental increases in stormwater flow or flooding on site or downstream, the Applicant for each AD facility project shall prepare a comprehensive drainage plan (prior to construction) and implement the plan during construction. The comprehensive drainage plan shall include engineered stormwater retention facility designs, such as retention basins, flood control channels, storm drainage facilities, and other features as needed to ensure that, at a minimum, no net increase in stormwater discharge would occur during a 10-year, 24-hour storm event, as a result of project implementation. Project related increases in stormwater flows shall be assessed based on proposed changes in impervious surface coverage on site, as well as proposed grading and related changes in site topography.

Impact 6.5: AD facilities could require additional water supplies resulting in depletion of available water supplies.

Mitigation 6.5: None required. Is dependent on a case-by-case analysis.

Impact 6.6: AD facilities could become inundated as a result of seiche, tsunami, or mudflow.

Measure 6.6: To ensure that proposed AD facilities would not incur impacts associated with seiche, tsunami, or mudflow, the applicant for each individual project shall ensure that all facilities are located outside of potential risk areas for seiche, tsunami, and mudflow. In the event that a proposed facility would be sited within a potential risk area for one of these hazards, the facility shall be raised above projected maximum base inundation elevations, or shall be protected from inundation by the installation of berms, levees, or other protective facilities.

Impact 6.7: AD facilities could contribute to cumulative impacts to water quality.

Measure 6.7: Implement Mitigation Measures 6.2 (a-f) and 6.3.

Impact 7.1: Construction of AD facilities could temporarily increase noise levels at nearby sensitive receptor locations or result in noise levels in excess of standards in local general plans, noise ordinances, or other applicable standards.

Measure 7.1a: Construction activities shall be limited to the hours between 7 a.m. and 7 p.m., Monday through Saturday, or an alternative schedule established by the local jurisdiction, or other limits to construction hours normally enforced by the local jurisdiction (see Measure 7.1d below).

Measure 7.1b: Construction equipment noise shall be minimized by muffling and shielding intakes and exhaust on construction equipment to a level no less effective than the manufacture's specifications, and by shrouding or shielding impact tools.

Measure 7.1c: Construction contractors within 750 feet of sensitive receptors shall locate fixed construction equipment, such as compressors and generators, and construction staging areas as far as possible from nearby sensitive receptors.

Measure 7.1d: Construction contractors shall comply with all local noise ordinances and regulations and other measures deemed necessary by the Lead Agency.

Impact 7.2: Noise from operation of AD facilities could substantially increase ambient noise levels at nearby land uses or result in noise levels in excess of standards in local general plans, local noise ordinances, or other applicable standards.

Measure 7.2: AD facilities located within 2,000 feet of a sensitive receptor shall conduct a site specific noise study. If operational sound levels would exceed local regulations, or 45 dBA at a sensitive receptor (if no regulations are available), additional sound-proofing such as enclosures, muffling, shielding, or other attenuation measures shall be installed to meet the required sound level.

Impact 7.4: Development of AD facilities could result in a cumulative increase in noise levels.

Measure 7.4: Implement Mitigation Measures 7.1a through 7.1d and Measure 7.2.

Impact 8.1: The project could substantially increase demands on fire protection services.

Measure 8.1: Implement Mitigation Measures 10.1b, 10.3c, and 11.4a.

Impact 8.2: The project could potentially exceed wastewater treatment requirements of the Regional Water Quality Control Board (RWQCB).

Measure 8.2a: Implement Mitigation Measure 8.3b if the operator does not have an existing agreement, such as for co-located facilities.

Measure 8.2b: In addition to an agreement for service, coordination with the wastewater treatment provider would be needed to determine if pre-treatment would be required to meet the RWQCB requirements for the existing wastewater treatment facility.

Impact 8.3: The project could result in significant environmental effects from the construction and operation of new water and wastewater treatment facilities or expansion of existing facilities.

Measure 8.3a: If the project proposes to obtain water from a water supplier (municipal system or other public water entity), the developer would enter into an agreement for service with the supplier.

Measure 8.3b: If the project proposes to obtain wastewater service from a wastewater treatment provider (municipal or other public entity), the developer would enter into an agreement for service with the provider.

Measure 8.3c: Alternate water sources, such as non-potable and recycled water, shall be used during the pre-processing and AD process phases where needed and as available.

Impact 8.6: The project could result in exceeding the capacity of a wastewater treatment provider.

Measure 8.6: If the project proposes to obtain wastewater service from a wastewater treatment provider (municipal or other public entity), implement Mitigation Measure 8.3b.

Impact 8.7: The project could result in the construction of new energy supplies and could require additional energy infrastructure.

Measure 8.7: Projects requiring off-site energy infrastructure must complete CEQA review for the proposed energy improvements as a separate project. Infrastructure improvements may qualify as a categorical exemption pursuant to CEQA.

Impact 9.1: Construction of AD facilities would intermittently and temporarily increase traffic congestion due to vehicle trips generated by construction workers and construction vehicles on area roadways.

Measure 9.1: The contractor(s) will obtain any necessary road encroachment permits prior to installation of pipelines within the existing roadway right-of-way. As part of the road encroachment permit process, the contractor(s) will submit a traffic safety / traffic management plan (for work in the public right-of-way) to the agencies having jurisdiction over the affected roads. Elements of the plan will likely include, but are not necessarily limited to, the following:

- Develop circulation and detour plans to minimize impacts to local street circulation. Use haul routes minimizing truck traffic on local roadways to the extent possible. Use flaggers and/or signage to guide vehicles through and/or around the construction zone.
- To the extent feasible, and as needed to avoid adverse impacts on traffic flow, schedule truck trips outside of peak morning and evening commute hours.
- Limit lane closures during peak traffic hours to the extent possible. Restore roads and streets to normal operation by covering trenches with steel plates outside of allowed working hours or when work is not in progress.
- Limit, where possible, the pipeline construction work zone to a width that, at a minimum, maintains alternate one-way traffic flow past the construction zone.
- Install traffic control devices as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones where needed to maintain safe driving conditions. Use flaggers and/or signage to safely direct traffic through construction work zones.
- Coordinate with facility owners or administrators of sensitive land uses such as police and fire stations, hospitals, and schools. Provide advance notification to the facility owner or operator of the timing, location, and duration of construction activities.
- Coordinate with the local public transit providers so that bus routes or bus stops in work zones can be temporarily relocated as the service provider deems necessary.

Impact 9.2: AD facility operations would not substantially increase on-going (operational) traffic volumes on roadways serving the facilities.

Measure 9.2: Measures will be imposed by applicable local agencies, as needed, to address site specific significant traffic impacts identified during subsequent facility-specific analyses, implementation of which would reduce those impacts to a less-than-significant level.

Impact 9.3: AD facilities could potentially cause traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways, and could increase traffic hazards due to possible road wear or to accidental spills of digestate (liquids and solids).

Measure 9.3a: Implement Measure 9.1, which stipulates actions required of the contractor(s) to reduce potential traffic safety impacts to a less-than-significant level.

Measure 9.3b: Prior to construction, the contractor(s), in cooperation with the agencies having jurisdiction over the affected roadways, will survey and describe the pre-construction roadway conditions on rural roadways and residential streets. Within 30 days after construction is completed, the affected agencies will survey these same roadways and residential streets in order to identify any damage that has occurred. Roads damaged by construction will be repaired to a structural condition equal to the condition that existed prior to construction activity.

Measure 9.3c: Prior to initiation of project operations, the project sponsor(s) will submit a Spill Prevention Plan to the appropriate local agency. The Spill Prevention Plan will include, among other provisions, a requirement that each truck driver know how to carry out the emergency measures described in the Spill Prevention Plan (therefore reducing roadway hazards if an accidental spill were to occur).

Impact 9.4: AD facilities could intermittently and temporarily impede access to local streets or adjacent uses (including access for emergency vehicles), as well as disruption to bicycle/pedestrian access and circulation.

Measure 9.4: Implement Measure 9.1, which stipulates actions required of the contractor(s) to reduce potential access impacts to a less-than-significant level.

Impact 9.5: The project could contribute to cumulative impacts to traffic and transportation (traffic congestion, traffic safety, and emergency vehicle access).

Measure 9.5a: Prior to construction, the project sponsor will coordinate with the appropriate local government departments, Caltrans, and utility districts and agencies regarding the timing of construction projects that would occur near AD project sites. Specific measures to mitigate potential significant impacts will be determined as part of the interagency coordination, and could include measures such as employing flaggers during key construction periods, designating alternate haul routes, and providing more outreach and community noticing.

Measure 9.5b: Implement Mitigation Measure 9.2.

Measure 9.5c: Implement Mitigation Measures 9.1, 9.3b and 9.3c.

Impact 10.1: AD facilities could have adverse effects on a scenic vista and/or scenic resources.

Measure 10.1a: Avoid siting AD facilities near scenic vistas and corridors designated within an applicable land use plan and the State Scenic Highway Program.

Measure 10.1b: Landscaping and/or vegetated berms should be used to minimize views of facilities from sensitive views.

Impact 10.2: AD facilities could degrade the existing visual character/quality of the site and its surroundings.

Measure 10.2a: Implement Mitigation Measures 10.1a and 10.1b.

Measure 10.2b: Facilities using truck tippers or other un-enclosed unloading should consider using litter fences to manage blowing litter. Facilities should educate haulers delivering materials to the AD facility through literature, web links, or provide training on the acceptance of waste at the facilities to minimize litter. Facility operators should develop a protocol to identify feedstocks that are severely contaminated with potential litter and reject unacceptable loads.

Measure 10.2c: Clean-up crews can be used as necessary to control litter.

Measure 10.2d: Feedstocks and digestate byproducts should be stored in enclosed facilities or processed in a timely manner to prevent visibly deteriorated site conditions.

Measure 10.2e: Project operators should consider enclosure of pre-processing operations if it provides an aesthetic and/or noise attenuating benefit.

Impact 10.3: AD facilities could create a new source of light or glare with adverse effects to daytime and/or nighttime views.

Measure 10.3a: Implement 10.1b.

Measure 10.3b: Any lighting (portable or permanent) should be hooded and directed onto the project site. This would reduce effects to nighttime skies from uplighting, reduce glare, and prevent light from spilling onto adjoining properties and roads.

Measure 10.3c: Flares may be enclosed to reduce the visibility of flames during operation.

Impact 10.4: The project could result in cumulative impacts to visual resources.

Measure 10.4: Implement Mitigation Measures 10.1a, 10.1b, 10.2a, 10.2b, 10.2c, 10.2d, 10.2e, 10.3a, 10.3b, and 10.3c.

Impact 11.1: Construction of AD facilities could result in the potential exposure of construction workers, the public and the environment to preexisting soil and/or groundwater contamination.

Mitigation Measure 11.1: Prior to final project design and any earth disturbing activities, the applicant or agency(ies) responsible shall conduct a Phase I Environmental Site Assessment (ESA). The Phase I ESA shall be prepared by a Registered Environmental Assessor (REA) or other qualified professional to assess the potential for contaminated soil or groundwater conditions at the project site; specifically in the area proposed for construction of AD facilities. The Phase I ESA shall include a review of appropriate federal, State and local hazardous materials databases to identify hazardous waste sites at on-site and off-site locations within a one quarter mile radius of the project location. This Phase I ESA shall also include a review of existing and past land uses through aerial photographs, historical records, interviews of owners and/or operators of the property, observations during a reconnaissance site visit, and review of other relevant existing information that could identify the potential existence of contaminated soil or groundwater.

If no contaminated soil or groundwater is identified or if the Phase I ESA does not recommend any further investigation then the project applicant or agency(ies) responsible shall proceed with final project design and construction.

If existing soil or groundwater contamination is identified, and if the Phase I ESA recommends further review, the applicant or agency(ies) responsible shall retain a REA to conduct follow-up sampling to characterize the contamination and to identify any required remediation that shall be conducted consistent with applicable regulations prior to any earth disturbing activities. The environmental professional shall prepare a report that includes, but is not limited to, activities performed for the assessment, summary of anticipated contaminants and contaminant concentrations at the proposed construction site, and recommendations for appropriate handling of any contaminated materials during construction.

Impact 11.3: Transportation, use, disposal or accidental spill of hazardous materials during the operation and maintenance of AD facilities would not result in potential harmful exposures of the public or the environment to hazardous materials.

Mitigation Measure 11.3: Implement Mitigation Measures 5.1a and 6.2a-f.

Impact 11.4: Operation of AD facilities could increase the risk of fire hazards due to the potential release of biogas.

Mitigation Measure 11.4a: Prior to project approval, AD facility operators shall prepare and implement a Fire Safety Plan that outlines fire hazards, describes facility operations procedures to prevent ignition of fires, requires regular inspection of fire suppression systems, and provides for worker training in safety procedures as well as protocols for responding to fire incidents. The Fire Safety Plan shall be reviewed and approved by the local fire enforcement agency.

Mitigation Measure 11.4b: Implement Mitigation Measure 11.5.

Impact 11.5: AD facilities could be located within one quarter mile of a school resulting in potential hazards associated with accidental release of hazardous materials, including biogas.

Mitigation Measure 11.5: AD facilities shall be sited at least one quarter mile from existing or proposed schools, daycare facilities, hospitals and other sensitive land uses.

Impact 11.7: AD facilities could be located within five miles of a public airport or private airstrip and create an aviation hazard.

Mitigation Measure 11.7: For any AD facility proposed within 5 statute miles of an airport's air operations area, the operator will notify the Federal Aviation Administration (FAA) Regional Airports Division office and the airport operator of the proposed facility as early in the process as possible. AD facilities with any open air (outdoor) activities must receive an FAA Determination of No Hazard prior to project approval.

Impact 11.8: Development of AD facilities could contribute to cumulative impacts related to hazardous materials.

Mitigation Measure 11.8: Implement Mitigation Measures 11.1, 11.4, 11.5, and 11.7.

If an anaerobic digestion facility is constructed in the future, it will be subject to various governmental approvals, primarily at the local level, and may be a "project" subject to the requirements of CEQA. In considering a specific anaerobic digestion facility, and based on site-specific conditions and circumstances, the Lead Agency (presumably Los Angeles County) will be required to adopt appropriate mitigation measures among those specified in the Final Program EIR and others as necessary to avoid or substantially lessen the significant environmental effects of the project. The Mitigation and Monitoring Program for the Program EIR can be found in Appendix B to this EIR for the CCL MPR.

2.3 Landfill Closure and Post-Closure

2.3.1 Landfill Closure

Landfill closure will occur on an incremental basis as areas of the landfill reach final grade. Closure activities will be performed in a manner consistent with a final closure plan to be prepared for the site that requires the approval of RWQCB, the LEA, and CalRecycle. The final closure plan will include a description of the area to be closed, proposed final cover, environmental monitoring and control systems (i.e., groundwater, surface water, leachate, and LFG), structures to be removed, site security, final grading, drainage and erosion control, and revegetation.

2.3.2 Financial Assurance

California regulations require that landfill owners and operators provide financial assurance for closing the landfill at the point in time when closure will be the most expensive and for 30 years of post-closure maintenance. The financial assurance amount is based on the estimated cost of hiring a third party to perform closure and post-closure maintenance. The cost estimates are adjusted annually based on an inflation factor provided by CalRecycle. Additionally, the cost estimates are revised any time there is a change in the closure design or post-closure maintenance activities.

Several different financial assurance mechanisms are allowed by Title 27. Currently, CCL is utilizing a surety bond for its closure and post-closure maintenance financial assurance mechanism.

2.3.3 Landfill Post-Closure Maintenance

In conjunction with the final closure plan, a final post-closure maintenance plan will be prepared. The final post-closure maintenance plan will be submitted to and approved by RWQCB, the LEA, and CalRecycle. The final post-closure maintenance plan will describe post-closure maintenance activities, including environmental monitoring (i.e., groundwater, surface water, leachate, and LFG), final cover inspection and maintenance procedures, drainage system inspection and maintenance procedures, vegetation inspection and maintenance procedures, final grading inspection and maintenance procedures, and proposed end use. The final post-closure maintenance plan also includes persons responsible for post-closure maintenance and a post-closure maintenance schedule.

2.3.4 Landfill Post-Closure End Use

The post-closure end use will be consistent with the surrounding terrain, land uses, and zoning. At closure, it is currently proposed that the landfill be maintained as non-irrigated open space area, as follows.

As part of a future closure plan for the landfill, CCL will propose that a park or other type of publicly accessible recreational use on the site be approved in accordance with applicable laws and the covenants, conditions, and restrictions for the landfill. If requested by the County or applicable governmental agency, CCL will offer to dedicate such park or recreational area upon completion. CCL proposes to revegetate exposed slopes and landfill top areas with native plants and other appropriate screening landscape. The mechanism for guiding revegetation efforts will be the Preliminary Closure and Postclosure Maintenance Plan for Chiquita Canyon Landfill. Subsequent revisions of the Maintenance Plan will include guidelines for revegetation including:

1) Revegetation plan development and implementation will be conducted by an ecological restoration specialist familiar with restoration of native Southern California plant communities.
2) Revegetation will ideally be done with native plants.
3) Revegetation will not include plants on the County's list of invasive species.

CCL acknowledges that any such post-closure use is subject to approval by regulatory agencies, including RWQCB and CalRecycle. The final closure of the landfill, including revegetation and development of the park or other publicly accessible recreational use, is to be implemented in phases as large enough areas of the landfill reach final grade and landfilling operations on that part of the landfill end. This sequential closure is intended to reduce the potential for visibility of the landfill from offsite areas.

Chapter 15.0, Visual Resources, provides a number of visual simulations from key observation points. These simulations show proposed final cover landscaping that blends with the existing vegetation on surrounding hillsides.

The LFGTE plant, LFG flares, and leachate storage/treatment/load-out facilities will continue operation for some period of time after the landfill is closed. Additionally, the HHWF and composting facility could continue operation after landfill closure.

CHAPTER 3.0

General Setting and Resource Area Analysis

3.1 General Setting

The Chiquita Canyon Landfill (CCL) is located in the northwestern portion of Los Angeles County within the county's Santa Clarita planning area. It is approximately 3 miles west of the intersection of Interstate 5 (I-5) and State Route 126 (SR-126) (Henry Mayo Drive). The landfill is located approximately 7 miles northwest of the City of Santa Clarita, 33 miles northwest of Downtown Los Angeles, and 18 miles east of the City of Fillmore. Figure 1-1 shows the location of CCL within the region. SR-126 is immediately south of the CCL current and proposed new entry.

CCL is in the northwest portion of the Santa Clarita Valley and can be located on the Val Verde United States Geological Survey (USGS) 7.5–minute quadrangle map. Topographically, the project site is characterized by steep-sided slopes (approaching 1:1 horizontal: vertical along two principal canyons). Chiquita Canyon, the main canyon, is generally oriented northeast-southwest, and the eastern canyon, where expansion is proposed, is oriented northwest-southeast. Both canyons open into the Santa Clara River Valley, also called the Santa Clarita Valley in the local area.

The Santa Clarita Valley is generally flat with gently rolling hills that have an average elevation of 1,200 feet to 1,400 feet above mean sea level (msl). The project site is located within the Transverse Ranges, within the western section of the San Gabriel Mountains that forms the northern border of the Santa Clara River Valley in the project area. South across the Santa Clara River are the Santa Susana Mountains. To the east are the communities of Valencia and Santa Clarita located in the Santa Clarita River Valley. To the west in Ventura County are the Piru Mountains of the Coast Ranges and the Los Padres National Forest. To the north beyond private holdings in the mountains is the Angeles National Forest. The mountain ranges that surround the Santa Clara River Valley can be viewed at great distances and form the dominant visual feature of the area; they are bisected by north-south trending canyons that are a prominent feature of the region (Los Angeles County Department of Public Works, 1999). In the natural areas onsite, ridgelines rise from 300 to 600 feet above the canyon floors. In some areas, previous landfilling has reduced the length of some slopes and has resulted in a more gentle terrain.

The Santa Clarita Valley floor is crossed by several watercourses, the largest being the Santa Clara River. The watercourses in this area are usually dry, maintaining surface flow only during the rainy months. However, the Santa Clara River maintains surface flows year-round. Castaic Creek, a major tributary of the Santa Clara River, passes through the vicinity of CCL, approximately 0.3 miles to the southeast. The confluence of these two drainage courses is located approximately 1 mile to the southeast of the current entry of CCL, but will be 0.3 mile from the new, proposed entry. Castaic Creek generally only flows seasonally or in response to large storm events. Within CCL, the major drainages carry surface water to the Santa Clara River (from the western portion of the landfill) or Castaic Creek (from the eastern portion of the landfill). In the immediate vicinity of CCL, some surface drainage flows to catch basins, where it is channelized into underground culverts. These culverts discharge water into surface drainages that ultimately discharge to the Santa Clara River.

The climate of the Santa Clarita Valley is characterized as Mediterranean, with cool wet winters and hot dry summers. The average annual temperature is 63.5 degrees Fahrenheit. Rainfall averages 14 inches per year, with 90 percent of precipitation occurring from November to April. The average annual precipitation varies between 10 and 40 inches per year (City of Santa Clarita, 1997). The prevailing winds blow from the west, although winds blowing from the east and southwest occur often. Average wind speeds range from 3.6 to 9.0 miles per hour.

In general, current land use patterns in the region reflect a mixture of open space, rural and suburban residential, commercial and industrial land, agricultural land, and vacant land consisting of undeveloped commercial/industrial areas, undeveloped hillsides, or floodplains. Within the immediate vicinity of CCL,

there are open space lands to the north; with existing and planned development in the near vicinity; existing and planned rural residential development to the west and northwest, existing and planned suburban residential areas to the northeast, and industrial/commercial areas to the northeast, east, and southeast. The United States Postal Service has a general mail facility adjacent to the eastern edge of the landfill property. The property immediately west, south, southeast, and east of the landfill is owned by the Newhall Land and Farming Company (NLF) and is currently either vacant or used for agricultural activities. Oil extraction fields and associated storage areas are located less than 1 mile from the landfill to the west and south. Valencia Travel Village, a short- and long-term campground and trailer park, is located approximately 1 mile east of the landfill on the south side of SR-126.

The project site consists of five major vegetation communities: Riversidean sage scrub, southern mixed chaparral, non-native grassland, dry wash, and riparian woodland. Riversidean coastal sage scrub is characterized by low-growing, shallowly rooted, soft-woody subshrub species such as California sagebrush, California buckwheat, brittlebush, deerweed, California encelia, and sages. Southern mixed chaparral characteristically supports dense woody vegetation. Common chaparral species include scrub oak, squaw brush, toyon, and mountain mahogany. Non-native grassland communities contain slender wild oat, barley, foxtail chess, soft chess, tocalote, and tree tobacco, in addition to occasionally scattered California sagebrush and California buckwheat. Dry wash vegetation communities are characterized by dense mulefat with scattered Fremont cottonwood; and riparian woodlands include Fremont cottonwood, Goodding's black willow, Mexican elderberry, mulefat, and summer mustard.

The project area is underlain by sedimentary bedrock of the Saugas Formation. This bedrock consists of sandstones, siltstones, and conglomerates. Overlying the bedrock are terrace deposits, alluvium, slopewash, and artificial fills. The Holser and San Gabriel Faults are the closest faults to the project area (County of Los Angeles, 1990).

The Proposed Project is located within the jurisdiction of Los Angeles County. As such, the Proposed Project is subject to the General Plan policies and zoning ordinances of Los Angeles County.

Additional detailed setting information specific to each resource area is provided in Chapters 4.0 through 16.0.

3.2 Resource Area Analysis

3.2.1 Organization of Resource Area Chapters

The environmental review of the Proposed Project by resource area is provided in Chapters 4.0 through 16.0 of this Draft Environmental Impact Report (DEIR). These chapters present the methodology, regulatory and environmental setting, thresholds of significance, environmental impacts, mitigation measures, significance after mitigation, and potential cumulative impacts. Tables and figures are included within the text of each chapter. The chapters are organized as follows:

- Chapter 4.0, Land Use
- Chapter 5.0, Geology and Hydrogeology
- Chapter 6.0, Surface Water Drainage
- Chapter 7.0, Water Quality
- Chapter 8.0, Biological Resources
- Chapter 9.0, Cultural and Paleontological Resources
- Chapter 10.0, Traffic and Transportation
- Chapter 11.0, Air Quality
- Chapter 12.0, Greenhouse Gas Emissions and Climate Change
- Chapter 13.0, Noise
- Chapter 14.0, Public Services and Utilities
- Chapter 15.0, Visual Resources
- Chapter 16.0, Environmental Justice and Socioeconomics

Other CEQA considerations, including unavoidable impacts, significant irreversible environmental changes, growth-inducing impacts, and effects found not to be significant are presented in Chapter 17.0, Other CEQA Required Sections. Chapter 18.0 includes a discussion of the project alternatives. Chapter 19.0 lists the organizations and persons consulted during preparation of the DEIR, and Chapter 20.0 presents the DEIR preparers and contributors. Finally, references for each environmental resource evaluated are presented in Chapter 21.0, References and Bibliography.

3.2.2 Methodology

This section identifies the methodology used to analyze potential environmental impacts for each resource area. Some evaluations (such as air quality, traffic, and noise) are quantitative, while others, such as visual, are qualitative.

3.2.3 Regulatory Setting

The regulatory setting provides a discussion of federal, state, and local regulations, plans, policies, and/or laws that are directly relevant to the environmental topic being analyzed.

3.2.4 Environmental Setting

The *California Environmental Quality Act (CEQA) Guidelines* Section 15125 requires that an environmental impact report (EIR) include a description of the physical environmental conditions in the vicinity of the Proposed Project as they exist at the time the Notice of Preparation (NOP) is published, or if no NOP is published, at the time the environmental analysis commences, from both a local and regional perspective. This section within Chapters 4.0 through 16.0 describes the existing environmental conditions in the Proposed Project vicinity as they exist at the time the NOP was prepared (November 2011). The environmental topics identified in this section include both a regional and local setting. The analyses focus on those aspects of the environmental resource areas that could be adversely affected by implementation of the Proposed Project as determined in the NOP and Initial Study (IS), and not those environmental resource areas determined to have no potential adverse impact from Proposed Project implementation.

3.2.5 Thresholds of Significance

This section identifies the criteria used to determine when physical changes to the environment created as a result of the project approval would be considered significant. The levels of significance for each environmental resource were established by identifying significance criteria. These criteria are based upon those presented in the CEQA environmental checklist.

The significance determination under each impact analysis is made by comparing the Proposed Project impacts with the conditions in the environmental setting and comparing the difference to the significance criteria.

3.2.6 Environmental Impacts

The potential impacts associated with each discipline are either quantitatively analyzed where possible or qualitatively analyzed where data were insufficient to quantify impacts. The impacts are compared to the significance criteria to determine the level of significance.

The impact sections focus on those impacts that are considered potentially significant per the requirements of CEQA or that have been identified as potential significant impacts in public comment. An impact is considered significant if it leads to a “substantial, or potentially substantial, adverse change in the environment.” Impacts from the project fall within one of the following categories:

No Impact: There would be no impact to the identified resource as a result of the project.

Less Than Significant: Some impacts may result from the project; however, they are judged to be less than significant. Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource. A “less-than-significant impact” applies where the environmental impact does not exceed the significance threshold.

Potentially Significant But Mitigation Measures Can Reduce Impacts to Less Than Significant: Significant adverse impacts may occur; however, with proper mitigation, the impacts can be reduced to less than significant.

Potentially Significant or Significant Impacts: Adverse impacts may occur that would be significant even after mitigation measures have been applied to minimize their severity. A "potentially significant or significant impact" applies where the environmental impact exceeds the significance threshold, or information was lacking to make a finding of insignificance.

3.2.7 Mitigation Measures

This section describes feasible mitigation measures that could minimize potentially significant or significant impacts that may result from project approval. The *CEQA Guidelines* Section 15370 defines mitigation to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

In accordance with CEQA (Public Resources Code Section 21081.6), a mitigation and monitoring program would be required to be adopted to demonstrate and monitor compliance with any mitigation measures identified in this DEIR. The program would identify specific mitigation measures to be undertaken, when the measure would be implemented, and the agency responsible for oversight, implementation, and enforcement.

3.2.8 Significance After Mitigation

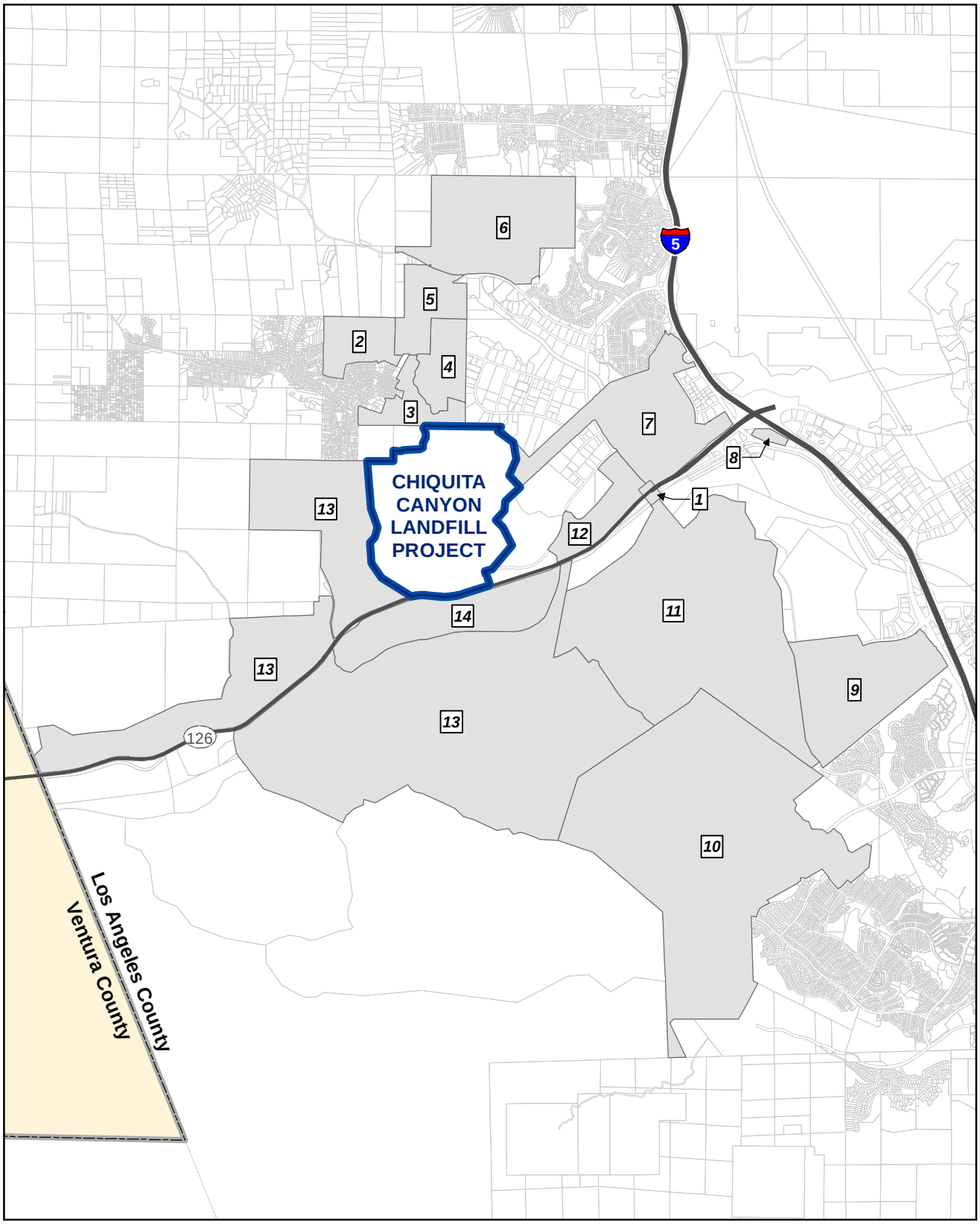
This section identifies the level of significance of the project impacts after mitigation.

3.2.9 Cumulative Impacts

CEQA Guidelines Section 15130 defines cumulative impacts as two or more individual effects that, when considered together, are considerable or compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of one project when added to other impacts from closely related past, present, and reasonably anticipated future projects. Significant cumulative impacts can result from individually minor but collectively significant impacts taking place over a period of time. As such, this section analyzes the potential impacts associated with the Proposed Project in conjunction with the effects of other development proposals in the project area.

The method of cumulative analysis used for the Proposed Project relies on a list of past, present, and probable future projects. These projects have been proposed by formal public notices (e.g., NOPs), have pending environmental documents, or are in the process of regulatory review and approval. Although any project could be modified, or even abandoned, large-scale development has been occurring in the vicinity of CCL and is planned to continue in the foreseeable future, even if construction or operation timeframes change. Generally, the cumulative impact area of the Proposed Project encompasses development projects in proximity to CCL, within portions of unincorporated Los Angeles (western portion) and Ventura counties (southeastern portion). The projects currently planned or proposed in the cumulative impact area of the Proposed Project were provided by the Los Angeles County Department of Regional Planning (LADRP). The cumulative project information is based on the best information available at the time this DEIR was prepared.

Table 3-1 lists the 14 projects that were identified. The location of these projects in relation to CCL is shown in Figure 3-1.



LEGEND

- Major Road
- Proposed Project Boundary
- X Cumulative Project*
- Approximate Project Limit
- Parcel

N

0 0.5 1
Miles

FIGURE 3-1
Cumulative Projects
Chiquita Canyon Landfill
Master Plan Revision

Note: *See Table 3-1 for project information.

\\galt\proj\chiquita\MapFiles\2012\DEIR\Cumulative_Projects.mxd

CH2MHILL

TABLE 3-1
CCL List of Cumulative Projects

Map Number	County ID	Developer	Project Name	Acres[a]	Units[a]	Status of Permit Application
1	-	Caltrans	SR-126/Commerce Center Drive Interchange Improvements Project	-	Roadway widening, grade-separated interchange at Commerce Center Drive and SR-126	Approved
2	TR060257	Sterling Gateway	Green Valley Ranch	113.66	244 single-family and 109 multi-family residential units, 8 open space lots, and 1 commercial lot	Pending. Project obtained time extension (3/20/14).
3	TR062000	Sterling Gateway	Green Valley Ranch	94.56	19 single-family residential units, 1 open space lot, and 1 public lot	Pending. Project obtained time extension (3/20/14).
4	PM060030	Sterling Gateway	N/A	117.12	37 industrial lots and 5 public lots (1,221,360 square feet)	Approved
5	TR060665	Del Valle Land Co, LLC	N/A	134.22	109 condominium units	Pending. Project obtained time extension (3/14/13).
6	TR52584	Palmer Investments	Hasley Golf Course	429.13	209 single-family residential units, 16 open space lots, and 3 park lots	Approved. Project obtained time extension (10/23/14).
7	PM18108	Newhall Land and Farming Company	N/A	396.01	N/A	Pending. Project obtained time extension (1/14/10).
8	PM060734	Old Road Venture, LLC	N/A	11.54	10 commercial units	Approved
9	TR53295	Newhall Land and Farming Company	Entrada	380.86	480 single-family residential units, 1,232 condominium residential units, 17 commercial lots, 61 open space lots, 1 park lot, 2 trail lots, and 10 public lots	Pending. Project obtained time extension (8/7/13).
10	TR061996	Stevenson Ranch Venture, LLC	Stevenson Ranch	1756.89	1,431 single-family residential units, 2,024 condominium residential units, 8 commercial lots, 371 open space lots, 1 park lot, 59 trail lots, and 76 public lots	Pending. Project obtained time extension (12/18/14).
11	TR061105	Newhall Land and Farming Company	Mission Village	1216.73	382 single-family residential units, 913 multi-family residential units, 2,230 condominium units, 149 open space lots, 3 park lots, 13 commercial lots, and 18 public lots	On hold. Project obtained time extension (6/26/16).
12	PM26363	Newhall Land and Farming Company	N/A	113.02	2 commercial lots, 9 industrial lots, and 5 open space lots	Approved. Project obtained time extension (12/18/14).

TABLE 3-1
CCL List of Cumulative Projects

Map Number	County ID	Developer	Project Name	Acres[a]	Units[a]	Status of Permit Application
13	TR060678	Newhall Land and Farming Company	Homestead Village	2891.77	967 single-family residential units, 4,811 condominium residential units, 259 open space lots, 5 park lots, 16 commercial lots, and 5 public lots	Pending. Project obtained time extension (12/18/14).
14	TR53108	Newhall Land and Farming Company	Landmark Village	292.74	270 single-family residential units, 430 multi-family residential units, 744 condominium residential units, 84 open space lots, 2 park lots, 16 commercial lots, and 4 public lots	On hold

[a] Units, acreage, and square footage were obtained from the Case and Hearing information on the Los Angeles County DRP website.
Notes:
Approved = Permit approved by LADRP, but not yet recorded.
Pending = Permit application currently being processed by Los Angeles County Department of Regional Planning (LCDRP)
ID = identification number
N/A = Information not available

The projects identified in the cumulative impact area are primarily proposed land development for residential, commercial, industrial, and open space uses. The majority of the residential projects include mixed-use development consisting of single- and multi-family homes and condominiums, combined with commercial, park, trail, open space, and parking. These residential mixed-use developments range in size from approximately 95 to 2,892 acres. The greatest density of residential use associated with mixed-use development is proposed on approximately 1,757 acres with 1,431 single-family and 2,024 condominium units, 371 open space lots, 8 commercial lots, 1 park lot, 59 trail lots, and 76 public lots. The lowest density of residential use associated with mixed-use development is proposed on approximately 95 acres with 19 single-family units, which also includes 1 open space lot and 1 public lot. There is 1 residential-only development, which proposes 109 condominium units on approximately 134 acres. There is 1 approved commercial-only project, which allows for retail, shopping center, hotel, warehouse, office building and other similar types of development within approximately 11.5 acres (10 commercial units). There is 1 industrial mixed-use development on approximately 117 acres, which includes 37 industrial lots and 5 public lots. There is 1 commercial/industrial mixed-use development on 113 acres with 2 commercial, 9 industrial, and 5 open space lots.

Given that the majority of the projects in the cumulative impact area are associated with mixed-use development (residential, commercial, industrial, etc.), construction generally would require similar activities and potentially affected resources would be similar, but with varying degrees of quantifiable impacts. With respect to post-construction impacts, it is anticipated that projects involving industrial development may have a greater potential for air quality, noise, and traffic impacts. The potential temporary and long-term impacts of the projects are summarized by resource area in Table 3-2.

TABLE 3-2
Potential Impacts Associated with Projects in the Cumulative Impact Area

Resource	Summary of Potential Cumulative Impacts
Land Use	Temporary and permanent conflicts with existing land uses, physical division of an existing community, and conflicts with applicable land use plans and adopted environmental goals or policies
Geology and Hydrology	Permanent seismic-related hazards including fault rupture, ground shaking, liquefaction, and landslides; reduced availability of known mineral resources (i.e., oil fields[a]); permanent increased demand for water supply
Surface Water Drainage	Temporary and permanent alteration of existing drainage patterns; permanent increase in impervious surface runoff; permanent flood zone hazards
Water Quality	Temporary effects to surface water and/or groundwater quality; waste discharges and National Pollutant Discharge Elimination System (NPDES) requirements
Biological Resources	Temporary and permanent impacts to special-status or sensitive species; loss of riparian, wetland, and/or other sensitive habitat; discharges to waters of the United States and/or State; disruption of wildlife movement; conflict with biological protection (tree preservation policy ordinance) and/or habitat conservation plan
Cultural and Paleontological Resources	Inadvertent discovery of historical, archaeological, or paleontological resources during construction
Traffic and Transportation	Temporary and permanent increases in traffic which conflict with circulation system effectiveness and performance or inadequate emergency access; conflict with adopted transportation policies including minimum levels of service, and/or public transit, bicycle, or pedestrian facilities
Air Quality	Temporary construction and permanent operations within an area of non-attainment for ozone (8-hour and 1-hour), PM_{10}, and $PM_{2.5}$
Greenhouse Gas Emissions and Climate Change	Temporary construction and permanent operational increase in carbon dioxide (CO_2), methane (CH_4), and Nitrous Oxide (N_2O)
Noise	Temporary construction and permanent operations resulting in increased ambient noise levels; temporary increase in groundborne noise or vibration during construction
Public Services and Utilities	Permanent increase in demand for fire, police, schools, parks, and other public facilities such as water/wastewater treatment facilities and landfills
Visual Resources	Permanent change to visual character and quality, including site-specific landform alterations and modifications to surrounding ridgeline views; new source of additional lighting and glare
Environmental Justice and Socioeconomics	Create adverse impacts that disproportionately affect a minority population or a low-income population; directly or indirectly induce substantial population growth; and displace substantial numbers of existing housing or numbers of people, necessitating the construction of replacement housing

[a] PM 060030 Santa Clarita Valley has site-specific impacts to an onsite oil field.

Notes:

PM_{10} = particulate matter less than 10 micrometers in aerodynamic diameter

$PM_{2.5}$ = particulate matter less than 2.5 micrometers in aerodynamic diameter

Anticipated implementation timeframes for the projects in the cumulative impact area were not available from existing information. Therefore, as a conservative analysis it is assumed that construction and/or operation of these projects could occur concurrent with operation of the Proposed Project. Generally, environmental impacts as presented in Table 3-2 have the potential to contribute to significant cumulative impacts when considered in combination with the impacts of the Proposed Project and are discussed by resource in Chapters 4.0 through 16.0. However, it is noted that several impacts presented in Table 3-2 are either site-specific impacts or legally require project-specific design and/or mitigation to ensure public safety (such as seismic-related, flood zone hazards, and surface water quality and drainage). While these impacts are acknowledged as part of the cumulative impacts discussion presented in Chapters 4.0 through 16.0, they would not be considered to contribute to significant cumulative impacts when evaluated in combination with the Proposed Project.

CHAPTER 4.0

Land Use

4.1 Introduction

This chapter evaluates the conformity of the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project) with applicable land use plans and policies, provides an inventory of existing and designated land uses at CCL, and evaluates potential environmental impacts related to land use. The assessment of land use impacts is based primarily on General Plans supplemented by zoning maps and other planning documents from the County of Los Angeles.

4.2 Methodology

The study area for this chapter was the property boundary of the Master Plan Revision and land surrounding CCL. The County of Los Angeles' land use and zoning designations, as provided in its General Plan, were reviewed, and the data were overlain with the landfill's property boundary to determine potential impacts of project construction and operation on land use. Additionally, the Regional Comprehensive Plan and Guide (RCPG) of the Southern California Association of Governments (SCAG), the Disposal Facility Siting Element of the Los Angeles County Integrated Waste Management Plan (CIWMP), the Santa Clarita Valley Area Plan, and the Castaic Area Community Standards District (CACSD) were considered as part of the analysis. The significance of the potential impacts was assessed in accordance with criteria presented in Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

4.3 Regulatory Setting

Provided below is a discussion of CCL's relationship to applicable regional, county, and local plans pertaining directly or indirectly to land use and/or growth and development. These plans include the RCPG of SCAG, Los Angeles County General Plan, Disposal Facility Siting Element of the Los Angeles CIWMP, Santa Clarita Valley Area Plan, and the CACSD.

Section 65302 of the *California Government Code* requires all cities and counties to adopt General Plans containing seven mandatory elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise, and Safety. The General Plan is the basic planning document that provides a blueprint for growth and development. Additionally, zoning ordinances developed by a county or city must be consistent with the General Plan.

CCL is located in Los Angeles County, within the planning area of the City of Santa Clarita, but outside its city limits and sphere of influence. The landfill site is also located within the Santa Clarita Valley Area Plan of the Los Angeles County General Plan and in the CACSD.

4.3.1 Regional and Local Regulations and Standards

4.3.1.1 Southern California Association of Governments Plans

SCAG serves as an areawide clearinghouse for regionally significant projects and reviews the consistency of local plans, projects, and programs with regional plans. The RCPG, approved by SCAG in 1996, was designed to provide regional planning guidance with respect to population, housing, and employment for the SCAG region. In addition to growth management, the RCPG contains other elements related to transportation, air quality, water quality, and hazardous waste management. According to a letter from SCAG to the County of Los Angeles dated August 29, 2005, the Proposed Project is not regionally significant per SCAG Intergovernmental Review Criteria and CEQA Guidelines Section 15206 (SCAG, 2005). See Appendix A to review this letter. For this reason, no further discussion of RCPG policies in relationship to the Proposed Project is provided herein.

4.3.1.2 County of Los Angeles General Plan

The County of Los Angeles General Plan was adopted in November of 1980, with subsequent adoption dates. The General Plan consists of the following elements: General Goals and Policies, Conservation and Open Space, Land Use, Housing, Transportation, Plan of Bikeways, Water and Waste Management Element, Economic Development, Safety, Noise, Scenic Highway, and Regional Recreation Plan Area. Los Angeles County is currently preparing a comprehensive General Plan update with adoption anticipated in 2013. The General Plan provides that areas covered by local, community, and specific plans be developed in accordance with the General Plan's applicable guidelines.

The General Plan Land Use Policy map designates the entire CCL property as Non-Urban (R). Additionally, the General Plan Special Management Areas map designates CCL as Hillside Management (HM), and the General Plan Solid Waste Management Plan map identifies CCL as an existing landfill. Existing zoning for the landfill is A-2-2 (Heavy Agriculture, with a 2-acre minimum lot size), A-2-5 (Heavy Agriculture, with a 5-acre minimum lot size), and M-1 ½-DP (Restricted Heavy Manufacturing, Development Program).

The Land Use Element and Water and Waste Management Element of the County of Los Angeles General Plan are relevant to this evaluation of potential land use impacts, and their applicable goals and policies are provided below.

Land Use Element

The land use element sets forth countywide policy for the general location and intensity of land use. The land use element also reinforces the General Plan's policies of conserving natural resources and protecting population from natural hazards by careful management of development in sensitive areas. Objectives and policies relevant to the Proposed Project are as follows:

- Provide for land use arrangements that take full advantage of existing public service and facility capacities.
- Protect major landfill and solid waste disposal sites from encroachment of incompatible uses.
- Provide a land use decision-making process supported by adequate information and ongoing citizen participation.
- Encourage more efficient use of land, compatible with, and sensitive to natural ecological, scenic, cultural, and open space resources.

Water and Waste Management Element

The water and waste management element contains objectives and policies for water supply and distribution, flood control and aquifer replenishment, sewer and water reclamation systems, and industrial and solid waste disposal. Objectives and policies relevant to the Proposed Project are as follows:

- Mitigate hazards and avoid adverse impacts in providing water and waste services and to protect the health and safety of all residents.
- Develop improved systems of resource use, recovery, and reuse.
- Provide efficient water and waste management services.
- Encourage private firms and public agencies providing water and waste management services to cooperate with all levels of government in establishing, enacting, and enforcing consistent standards and criteria.
- Cooperate with federal, state, regional, and local agencies to develop and implement new technologies in water and waste management while continuing existing methods until new alternatives are economically feasible.
- Use technology for the conversion of waste to energy.

4.3.1.3 Los Angeles Countywide Siting Element

The Los Angeles Countywide Siting Element (CSE) was prepared by the Los Angeles County Department of Public Works (LACDPW), Environmental Programs Division, and adopted by the County Board of Supervisors in January 1997. The CSE meets the requirements of Title 14 *California Code of Regulations* (CCR) Section 18775, which requires that these elements demonstrate that counties have a minimum of 15 years of combined permitted disposal capacity. The purpose of the CSE is to provide a planning mechanism to address the solid waste disposal capacity needed in Los Angeles County for each year of the 15-year planning period, through a combination of existing facilities, expansion of existing facilities, planned facilities, and other strategies.
The CSE recognizes the need for the expansion of CCL to meet Los Angeles County's future disposal needs, and identifies the landfill as a potential landfill expansion site.

4.3.1.4 Santa Clarita Valley Area Plan

The majority of CCL is designated as HM in the Santa Clarita Valley Area Plan Land Use Map. In addition to HM, the southeastern part of the landfill is designated as Industry (M) in the Santa Clarita Valley Area Plan. Specifically, Industry use must be clean, nonpolluting, with no offensive odors, and visually attractive. Lastly, part of CCL is designated as Public Service Facilities (P).

In 1976, the County of Los Angeles, through the General Plan, established Significant Ecological Areas (SEAs) that were intended to represent the wide variety of biological communities within Los Angeles County. The SEAs are intended to be preserved in an ecologically viable condition for the purpose of public education, research, and other non-disruptive outdoor uses but do not preclude limited compatible development. The Santa Clarita Valley Area Plan includes guidelines to protect identified resources in SEAs. The nearest SEA to CCL is SEA #23, Santa Clara River, located south of CCL. Specifically, the Proposed Project would be entirely outside of this SEA. For this reason, no further discussion of SEAs and their policies in relationship to the Proposed Project is provided herein.

4.3.1.5 Castaic Area Community Standards District

The CACSD was established to protect the rural character, unique appearance, and natural resources of the Castaic Area; provide a means of implementing special development standards, which will ensure that new development is carried out in a manner compatible with and complimentary to the existing neighborhoods and the goals of the Santa Clarita Valley Area Plan; support trucking-related business activities within the areas they currently operate, without interfering with the community's safe circulation and traffic patterns; strengthen existing oak tree protection regulations where appropriate; and preserve significant ridgelines.
The CACSD includes the existing communities of Castaic, Castaic Junction, Val Verde, Hasley Canyon, Hillcrest, and Paradise Ranch; the canyons of Charlie, Tapia, Romero, Sloan, and Violin; it also includes the Valencia Commerce Center, the Peter Pitchness Detention Center, the Northlake development and part of Newhall Ranch (CACSD, 2004).

4.4 Regional Setting

CCL is located in the northwestern portion of unincorporated Los Angeles County and is approximately 3 miles west of the Interstate 5 (I-5) and State Route 126 (SR-126) junction. CCL is also located approximately 7 miles northwest of the City of Santa Clarita, 33 miles northwest of Downtown Los Angeles, and 18 miles east of the City of Fillmore.

CCL is located along the northwestern edge of the Santa Clarita Valley, in the San Gabriel Mountains of the Transverse Mountain Ranges. Topographically, the project area has steep-sided canyons with slopes that approach 1:1 (horizontal:vertical), one canyon oriented generally northeast-southwest, and one oriented northwest-southeast. In the natural areas onsite, the ridgelines rise from 300 to 600 feet above the canyon floors. In some areas, previous land filling has reduced the length of some slopes and has resulted in a more gentle terrain.

4.5 Local Setting

4.5.1 Existing Land Uses

CCL includes several buildings used to support landfill operations and include an administrative office, a scale house at the front gate, and a maintenance building used for vehicle maintenance and storage. The buildings are generally located in the southern portion of the site near the entrance to the landfill. Other site improvements include a landfill gas collection system on both closed and active landfill areas, a landfill gas-to-energy facility, a flare station, and water storage tanks.

The existing permitted waste footprint is approximately 257 acres of the total 639-acre site, but not all of the 257 acres have been developed. The currently permitted landfill consists of three fill areas: Primary Canyon, Canyon "B," and the Main Canyon.

The Primary Canyon and Canyon "B" stopped receiving waste in 1988 and 1989, respectively. The Main Canyon, as it is now called, includes Canyons A, C, and D and Modules 1 to 13 referenced in the previous landfill expansion project in 1997. The Main Canyon will be closed in phases as significant portions of the landfill reach final grade.

4.5.2 Surrounding Land Uses

Much of the area surrounding CCL consists of undeveloped open space as a result of steep topography. Surrounding land uses include mostly open space lands to the north; rural residential development is located to the west and northwest along Chiquito Canyon Road and in the Val Verde area, respectively. Relatively new suburban residential areas are located to the northeast. The closest of these residential dwellings is located approximately 500 feet from the northwest site boundary corner and 1,200 feet from the landfill footprint, and intervening topography prevents residential views of the operating landfill from these locations. Industrial/commercial uses are located to the northeast, east, and southeast. The United States Postal Service has a General Mail Facility adjacent to the eastern edge of the landfill property boundary. The property immediately west, south, southeast, and east of the landfill is owned by the Newhall Land and Farming Company (NLF) and is currently either vacant or is used for agricultural activities. Oil extraction fields and associated storage areas are located less than 1 mile from the landfill to the west and south. Valencia Travel Village, a short- and long-term campground, is located approximately 1 mile east of the landfill on the south side of SR-126.

4.5.3 Planned Surrounding Land Uses

The property immediately west and south of the landfill is owned by NLF and is currently either vacant or used for agricultural activities. There are four new residential and commercial developments planned for the land adjacent (south and west of the landfill) to SR-126: Landmark Village, Mission Village, Homestead Village, and Potrero Village. The villages will provide numerous dwelling units and thousands of square feet of commercial space. Construction and occupancy of all four developments will occur roughly between 2014 and 2030.
The first planned development located immediately south of the landfill will be Landmark Village. This will be the first development to begin with occupancy starting in 2016. This development has access off SR-126 at Wolcott Way and Long Canyon/Chiquito Canyon Road. Improvements to these two intersections will be required immediately to accommodate additional traffic volumes and turning movements generated by the anticipated new housing units and commercial space (NLF, email comm., 2013).

4.6 Potential Impacts

This land use analysis evaluates the consistency of Proposed Project implementation with the type and intensities of land uses existing and proposed on and near the site, current zoning and general plan designations for the site, and for consistency with applicable plans and policies.

4.6.1 Standards of Significance

Proposed Project activities are generally considered to result in a significant impact when they are not compatible with nearby land uses or if they are inconsistent with current city or county plans, ordinances, programs, and policies. Specific thresholds of significance are provided below.

4.6.2 Thresholds of Significance

Land use impacts would be considered significant if the Proposed Project would result in the following:

- Conflict with existing land uses at the project site
- Disrupt or divide the physical arrangement of an existing community
- Conflict with applicable land use plans including the Los Angeles County General Plan
- Conflict with adopted environmental goals or policies contained in other applicable plans

4.6.3 Proposed Project

Proposed Project implementation would extend the waste footprint at CCL by approximately 143 acres within the existing landfill area.

Expansion activities would include liner, drainage, and landfill gas control system installation and would occur periodically over the life of the landfill. These activities, in addition to routine waste disposal activities, would involve the use of heavy equipment and trucks. Such activities are consistent with the existing land uses (i.e., waste disposal activities) that have occurred at CCL since its inception. Likewise, waste disposal activities would continue to occur within the existing site boundary, and would not disrupt or divide the physical arrangement of an existing community. Additionally, the Proposed Project is consistent with or would not conflict with any applicable local plan or policy including general plans, specific plans, CIWMP and zoning ordinances, and habitat conservation plans. The potential impacts resulting from the Proposed Project specific to resources such as aesthetics, noise, and air quality are discussed in detail in their respective chapters. Therefore, because the Proposed Project would maintain the intended land uses of the site, and would not conflict with applicable land use plans or adopted policies, no impacts related to land use are anticipated.

CCL has also included within the Project Description a composting operation, household hazardous waste facility (HHWF), and set-aside of a portion of the site within the existing CCL property boundary that could be used for a potential future conversion facility. The Proposed Project does not include construction or operation of a conversion technology facility. The composting facility, HHWF, and future conversion facility would all be co-located with the landfill, and therefore, future activities associated with the facilities would be consistent with the existing land use designations for the Project site (i.e., waste disposal activities) that have occurred and will continue to occur at CCL. The proposed facilities would maintain the intended land uses of the site, and would not conflict with applicable land use plans or adopted policies, and no impacts related to land use are anticipated from these facilities.

4.7 Mitigation Measures

No significant adverse impacts to land use resulting from the Proposed Project are anticipated; therefore, no mitigation measures are required.

4.8 Significance After Mitigation

The Proposed Project would not result in significant impacts to land use.

4.9 Cumulative Impacts

The cumulative projects discussed in Chapter 3.0, General Setting and Resource Area Analysis, would likely result in significant changes to land uses in the vicinity of CCL. A combination of residential, commercial, open space, public, and industrial uses are planned within the vicinity of the Proposed Project. However, the Proposed Project would maintain the intended land use of CCL, would not conflict with applicable land use plans or adopted policies, and would not result in impacts related to land use. Therefore, the Proposed Project, when combined with reasonably foreseeable projects in the project vicinity, would not incrementally contribute to cumulative changes to land use, and no cumulative impacts would result.

No cumulative impacts would result from the implementation of the Proposed Project; therefore, no mitigation measures are required.

CHAPTER 5.0

Geology and Hydrogeology

5.1 Introduction

This chapter evaluates the geology, seismicity, faults, hydrogeology, slope stability, and other potential geologic hazards related to the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project).

5.2 Methodology

This evaluation is based on the following studies prepared by R.T. Frankian & Associates (RTF&A), plans for the Proposed Project, other prior geologic and hydrogeologic investigations for the site further referenced below, compliance with the applicable regulations, and other applicable information:

- *Hydrogeologic Report, Chiquita Canyon Landfill* (Hydrogeologic Investigation; RTF&A, 2012b)
- *Geotechnical Investigation, Master Plan Revision, Chiquita Canyon Landfill* (Geotechnical Investigation; RTF&A, 2012c)
- *Geotechnical Evaluation of Updated Excavation Plan, Master Plan Revision, Chiquita Canyon Landfill* (Additional Geotechnical Evaluation; RTF&A, 2014a)

The first two studies reflect the results of several site-specific investigations performed to evaluate potential impacts from the Proposed Project (RFF&A, 2012b; RTF&A, 2012c). The third study reflects the results of additional geotechnical evaluation for two additional cut slopes and modification of previously proposed cut slopes for the updated 2014 Excavation Plan (RGF&A, 2014a). In addition, the third study includes evaluation of cut slopes that would be created for potential improvements in the Set-Aside Area and three Potential Borrow Areas. The purpose and scope of work performed for each of these studies are described in Section 5.4. The reports for the studies are included as Appendixes B (2012 Hydrogeologic Report) and C (2012 Geotechnical Investigation and 2014 Additional Geotechnical Evaluation) to this Draft Environmental Impact Report (DEIR). Many figures from these two reports are oversized sheets and are reproduced as 11- by 17-inch figures in this DEIR for convenience. The original, oversized figures should be reviewed for detailed information that is not legible on the 11- by 17-inch figures.

In addition, the geologic and hydrogeologic information in this chapter is based on groundwater monitoring data collected pursuant to Waste Discharge Requirements (WDR) Order No. 98-086 and Monitoring and Reporting Program (MRP) No. 6231, issued by the California Regional Water Quality Control Board – Los Angeles Region (RWQCB) on November 4, 1998. The scope of work performed and data collected pursuant to these WDRs and MRP are presented in Chapter 7.0, Water Quality.

5.3 Regulatory Setting

5.3.1 Federal Regulations and Standards

Title 27, *California Code of Regulations* (CCR), contains the current regulations of the California Department of Resources Recycling and Recovery (CalRecycle, previously the California Integrated Waste Management Board) and State Water Resources Control Board (SWRCB) pertaining to landfill disposal of municipal solid wastes. Federal standards regarding municipal solid waste landfills are contained in Title 40, Part 258 of the *Code of Federal Regulations* (CFR), "Solid Waste Disposal Facility Criteria," commonly referred to as Subtitle D. By enacting Subtitle D, the United States Environmental Protection Agency (EPA) intended that states maintain the lead role in implementing and enforcing Subtitle D through approved state permit programs. California's solid waste permit program was approved by EPA. As a result, California's solid waste regulations were determined to be functionally equivalent to Subtitle D. Accordingly, throughout this section, references to pertinent regulations will be to Title 27 CCR regulations.

5.3.2 State Regulations and Standards

The Title 27 CCR regulatory scheme governing landfill disposal of municipal solid wastes is a blend of prescriptive and performance standards covering every aspect of the design, construction, and operation of landfill disposal facilities. These standards include siting criteria, seismic design standards, and containment system design and construction strategies to prevent impacts to surface water and groundwater resources. The following subchapters from Chapter 3 of Title 27 (Criteria for all Waste Management Units, Facilities, and Disposal Sites) are relevant to geology and hydrogeology:

- Subchapter 2 – Siting and Design
- Subchapter 3 – Water Monitoring

Additional requirements for these siting and design criteria are provided in the following subchapters of Title 27 for the operational, closure, and post-closure periods:

- Subchapter 4 – Criteria for Landfills and Disposal Sites
- Subchapter 5 – Closure and Post-Closure Maintenance

Relevant sections from Subchapter 2 (Siting and Design) are summarized below, except those related to precipitation and drainage control, which are summarized in Chapter 6.0, Surface Water Drainage. Relevant sections from Subchapter 3 (Water Monitoring) are summarized in Chapter 7.0, Water Quality.

Section 20240, Classification and Siting Criteria: Waste management units and engineered structures shall meet the following criteria:

- **5-Foot Separation.** All new landfills, waste piles, and surface impoundments shall be sited, designed, constructed, and operated to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater. Existing landfills, waste piles, and surface impoundments shall be operated to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater (Subsection [c]).
- **Unit Foundation.** All engineered structures (including, but not limited to containment structures) constituting any portion of a Unit shall have a foundation or base capable of providing support for the structures, and capable of withstanding hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift and all effects of ground motions resulting from at least the maximum probable earthquake for Class III Units, as certified by a registered civil engineer or certified engineering geologist (Subsection [d]).

Section 20260, Class III: Landfills for Nonhazardous Solid Waste: Waste management units and engineered structures shall meet the following criteria:

- **General.** Class III landfills shall be located where site characteristics provide adequate separation between solid waste and waters of the state (Subsection [a]).
- **Geologic Setting.** Municipal solid waste landfills shall be sited where soil characteristics, distance from waste to groundwater, and other factors will ensure no impairment of beneficial use of surface water or of groundwater beneath or adjacent to the landfill (Subsection [b]). Factors that shall be evaluated include: (A) size of the landfill; (B) hydraulic conductivity and transmissivity of underlying soils; (C) depth to groundwater and variations in depth to groundwater; (D) background quality of groundwater; (E) current and anticipated use of the groundwater; and (F) annual precipitation. Where consideration of these factors indicates that site characteristics alone do not ensure protection of the quality of groundwater or surface water, Class III landfills shall be required to have a single clay liner with hydraulic conductivity of $1x10^{-6}$ centimeters per second (cm/sec) or less. (The liner requirement in Section 20260 was superseded by SWRCB Resolution No. 93-62, incorporating Subtitle D requirements, which requires a composite liner that comprises a 2-foot-thick compacted soil layer having a maximum permeability of 1×10^{-7} cm/sec overlain by a geomembrane having a minimum thickness of 40 mils.)

- **Flooding.** New Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period (Subsection [c]).
- **Ground Rupture.** New Class III landfills shall not be located on a known Holocene fault (Subsection [d]). A Holocene fault is defined as a fault which is or has been active during the last 11,000 years.
- **Rapid Geologic Change.** New Class III landfills can be located within areas of potential rapid geologic change only if RWQCB finds that the Unit's containment structures are designed, constructed, and maintained to preclude failure (Subsection [e]).

Section 20330, SWRCB – Liners: Liners shall be designed and constructed to contain the fluid, including landfill gas, waste, and leachate, as required in the above siting criteria.

Section 20340, SWRCB – Leachate Collection and Removal Systems (LCRS): LCRSs are required for Class III landfills which have a liner or which accept sewage or water treatment sludge. The LCRS shall be installed directly above underlying containment features or landfill and waste piles and installed between the liners for surface impoundments.

Section 20360, Subsurface Barriers: Subsurface barriers are cutoff walls that are used in conjunction with natural geologic materials to ensure that the lateral hydraulic conductivity standards are satisfied where there is potential for lateral movement of fluid. Cutoff walls shall be installed at Class III landfills as required by RWQCB.

Section 20365, Precipitation and Drainage Controls: Units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping.

Section 20370, Seismic Design: Class III Units shall be designed to withstand the maximum probable earthquake (MPE) without damage to the foundation or to the structures which control leachate, surface drainage, erosion, or gas. As required in Section 21750(f)(5), a stability analysis, including a determination of the expected peak ground acceleration of the Unit associated with the MPE for Class III landfills shall be included as part of the report of waste discharge (ROWD) (or Joint Technical Document [JTD]) for the proposed Unit. Section 21750(f)(5) also requires an updated stability analysis be included as part of the final closure and post-closure maintenance plan if the original analysis no longer reflects the conditions at the Unit.

It should be noted that RWQCB previously required that landfills within the Los Angeles Region be designed to withstand the peak ground acceleration (PGA) associated with the maximum credible earthquake (MCE), which is a more stringent requirement than that contained in Section 20370. The MCE is the maximum earthquake that appears capable of occurring under the currently known geologic framework.

5.4 Site-Specific Investigations

The purpose and scope of work performed for the Hydrogeologic Investigation (RTF&A, 2012b) and Geotechnical Investigation (RTF&A, 2012c) are summarized below. The Hydrogeologic Investigation and Geotechnical Investigation were performed to provide additional characterization of the North and East Canyon area, the South Main Canyon area, and the Landfill Entrance Road. The locations of the site-specific investigation activities are shown in maps and figures in the respective analysis sections below.

5.4.1 Site Hydrogeologic Investigation

5.4.1.1 Purpose of the Site Hydrogeologic Investigation

The purpose of the Hydrogeologic Investigation (RTF&A, 2012b) was to describe the site hydrogeologic conditions and provide recommendations for groundwater monitoring and perimeter landfill gas monitoring systems for the Proposed Project, which includes changes to the currently approved landfill footprint. The landfill footprint for the Proposed Project is shown on the Proposed Excavation Plan (Figure 2-4) provided by Golder Associates Inc. (Golder). With respect to the monitoring programs, the most significant modification to

the landfill footprint is the addition of the North Canyon and East Canyon area, which will be contiguous with the northeast side of the existing active Main Canyon landfill and the north side of the closed Canyon B landfill. The Proposed Project also moves the southern perimeter of the Main Canyon landfill into the South Main Canyon area near the current entrance area.

The North Canyon and East Canyon area has been the subject of several phases of geologic and hydrogeologic characterization, including groundwater monitoring well installations and aquifer testing (RTF&A, 2004a, 2005a, and 2006a), geotechnical investigations (RTF&A, 2006b, 2010b, and 2012c), a geologic fault study (RTF&A, 2006c), and installation of perimeter landfill gas wells (RTF&A, 2009a). The South Main Canyon area has also been the subject of multiple phases of geologic and hydrogeologic characterization, including geotechnical investigations (RTF&A, 2009b and 2012c), and installation of groundwater wells and perimeter landfill gas wells (RTF&A, 2003a and 2009a).

The Hydrogeologic Investigation was based on the characterization work for the North Canyon and East Canyon area, the South Main Canyon, and a review of site data, field explorations, and geologic/ hydrogeologic analyses. The report provides an overview of site geologic conditions for understanding the hydrogeology, but the geology is detailed separately in the Geotechnical Investigation (RTF&A, 2012c).

5.4.1.2 Scope of Work for the Site Hydrogeologic Investigation

The scope of work for the site Hydrogeologic Investigation (RTF&A, 2012b) consisted of the following:

- Planning an exploratory drilling program to characterize hydrogeologic conditions in the Pico Formation and lowermost Saugus Formation in the vicinity of the North Canyon
- Preparing a work plan for exploratory well installations (RTF&A, 2010a) and submittal to RWQCB
- Drilling exploratory borings and installing wells DW-27 and DW-28, piezometer PZ-8, temporary piezometers HS-1 and HS-2, and gas probe GP-26
- Preparing a gas probe installation report (RTF&A, 2010c) for CCL
- Preparing a groundwater well installation report (RTF&A, 2010d) and submittal to RWQCB
- Identifying and correlating geologic contacts and stratigraphic marker beds across the site using available surface geologic maps, test pit logs, dozer cut logs, and exploratory boring logs, and updating the site Geologic Map
- Preparing a comprehensive, detailed set of geologic sections through the groundwater monitoring wells and piezometers to illustrate geologic and hydrogeologic conditions at the existing and proposed waste management units
- Evaluating groundwater elevation data and preparing groundwater elevation and flow maps
- Analyzing the Proposed Project excavation plan with respect to siting and design requirements for maintaining greater than 5 feet of separation between refuse and the highest anticipated groundwater underlying the proposed waste management units
- Evaluating the Proposed Project with respect to groundwater monitoring system requirements, and designing a monitoring system based on the geologic and hydrogeologic conditions beneath the landfill and along the point of compliance (POC)
- Evaluating perimeter landfill gas system monitoring requirements for the Proposed Project, and designing a proposed monitoring system based on the site geologic and hydrogeologic conditions

5.4.2 Geotechnical Investigation

5.4.2.1 Purpose of the Geotechnical Investigation

The Geotechnical Investigation (RTF&A, 2012c) presents the results of the RTF&A geotechnical investigation for the Proposed Project. The investigation is based on the November 2011 *Excavation Plan* for the Proposed Project, prepared by Golder, which has been updated with the 2014 *Proposed Project Excavation Plan* as presented in Figure 2-4. The Proposed Project includes extending the currently approved landfill footprint into the areas northeast and south of the active Main Canyon landfill, the relocation of the entrance road, and changes to the existing south and east sedimentation basins. The report summarizes the stability of slopes planned in the following areas:

- Northeast of the Main Canyon landfill, where the Proposed Project grading limits include the lined landfill area, permanent cut slopes above the landfill perimeter, and grading for the east basin
- South of the Main Canyon landfill, where the Proposed Project grading limits include the lined landfill area, permanent cut slopes above the landfill, grading for the south basin, and the future entrance road south of Primary Canyon

The Geotechnical Investigation (RTF&A, 2012c) presents the results of RTF&A's evaluation of the geologic and geotechnical conditions at CCL. The purpose of the evaluation was to identify existing or potential geologic hazards and substantiate that the site is suitable for the proposed development from a geotechnical and geologic perspective. The findings and recommendations are based on the results of the site geologic mapping and subsurface investigation, review of published data, and appropriate engineering and geologic analyses.

5.4.2.2 Project Description of the Geotechnical Investigation

North and East Canyon Excavation Area

The North and East Canyon Excavation Area will encompass northern portions of the property known as North Canyon and East Canyon. In this area, the Proposed Project extends the lined landfill footprint north and northeast of the active Main Canyon landfill. The Proposed Project grading plan includes permanent cut slopes above the perimeter of the proposed landfill, lined cut slopes and fill slopes within the landfill area, and permanent cut slopes above the proposed east basin. The proposed landfill liner limit is approximately coincident with the downslope side of the perimeter road.

North Canyon is located in the north portion of the site, just north of the active Main Canyon landfill. The topography of the North Canyon site is dominated by a southerly draining canyon with moderately steep bedrock slopes forming the west, north, and east canyon walls. These slopes descend to the canyon bottom at an overall gradient of approximately 1½:1 (horizontal:vertical). The floor of the canyon has been modified by at least two episodes of filling, including fill placed in the mid-1990s during construction of Canyon C Cell 2, and in 2003 to 2004 when fill material was generated during removal of the Northridge earthquake landslide. As much as 70 plus or minus (±) feet of fill has been placed in North Canyon since the 1990s, changing the canyon configuration from a steeply incised canyon to one that is somewhat broad and flat-bottomed.

The East Canyon topography is characterized by a series of southerly to easterly descending ridges that border two southerly draining tributaries of Castaic Creek. The natural slopes descend toward the two canyons at gradients ranging generally from 1½:1 to 3:1. The northern portion of the East Canyon includes an existing 3:1 southeasterly facing 180±-feet-high fill slope constructed for two offsite water tanks. Approximately two-thirds of the fill slope is located within CCL property.

Existing site elevations range from approximately 1,660 feet above mean sea level (msl) at the upper reaches of North Canyon to 1,100 feet msl at the confluence of the two tributary canyons of Castaic Creek.

The North and East Canyon Excavation Area extends from the northwest corner of CCL (above the perimeter road of Main Canyon landfill) to the eastern property line, immediately north of Canyon B landfill and northwest of the post office. The proposed floor of the excavation will range from approximate elevations of 1,175 feet msl to 1,125 feet msl. Numerous cut slopes will be graded as part of the North and East Canyon

development. Proposed slope gradients will range from 2:1 to 4:1. The maximum proposed cut slope height will be approximately 300 feet.

South Main Canyon and Entrance Road

The South Main Canyon and Entrance Road areas lie within the southwest portion of the property. In the South Main Canyon area, the Proposed Project grading plan includes extending the lined landfill footprint south of the active Main Canyon landfill. The proposed entrance road is east of the existing landfill entrance, along the south side of the closed Primary Canyon landfill.

The South Main Canyon includes the main southerly draining canyon, an easterly draining tributary canyon, and ascending canyon slopes, located northwest of an existing sedimentation basin. Natural slope gradients range from 1½:1, for the slopes at the head of the canyon, to 4:1. Elevations range from approximately 1,330 feet msl to 980 feet msl.

A new landfill Entrance Road is proposed in the southwest corner of the site, with the road alignment beginning at the current intersection of Franklin Parkway and Wolcott Way, extending west-southwesterly toward the current landfill entrance. The topography along the proposed Entrance Road is characterized by a relatively flat alluviated area along the north side of State Route 126 (SR-126), bordering moderately to steeply ascending bedrock slopes. Cut-and-fill grading will be utilized for the Entrance Road, including south- and west-facing cut slopes up to 160 feet high. Proposed slope grades will range from 1½:1 to 2:1.

5.4.2.3 Subsurface Exploration for the Geotechnical Investigation

Field exploration was conducted within the project site to develop and refine understanding of the geologic surface and subsurface conditions. In particular, attention was focused on the underlying geologic structure and stratigraphy that will affect the slope stability of the proposed excavation plan. Previous field explorations for the Proposed Project were conducted in the North and East Canyon (RTF&A, 2006b and 2006c) and in the South Main Canyon (RTF&A, 2009b). The surface geologic conditions within the landfill were previously mapped by EMCON (1990a), Harding Lawson and Associates (HLA, 1987), and GeoLogic Associates (2005a), and mapped at a regional scale by professionals of the Dibblee Foundation (1993), the United States Geological Survey (USGS) (Winterer and Durham, 1962), and the California Geological Survey (CGS), formerly known as California Division of Mines and Geology (CDMG) (Barrows, 1986).

The site was explored between April 2010 and December 2011 (RTF&A, 2012c). The investigation included exploring the subsurface conditions beneath the site by excavating 27 bucket auger borings and four hollow-stem auger borings at the locations depicted on the Geologic Map. Undisturbed samples were obtained from the borings for laboratory examination and testing. Standard penetration test samples were also obtained from the hollow-stem auger borings.

The boring logs from the current investigation are presented in Appendix B of the Geotechnical Investigation report (RTF&A, 2012c). The boring logs from previous investigations are presented in Appendix C of the Hydrogeologic Investigation report (RTF&A, 2012b).

5.4.2.4 Laboratory Analysis for the Geotechnical Investigation

Laboratory tests were performed on selected samples obtained from the borings to aid in the classification of the soils, for use in slope stability analyses, and to determine the pertinent engineering properties of the subsurface earth materials. The following tests were performed:

- Moisture content and dry density determinations
- Direct shear tests
- Consolidation tests
- Plasticity index
- Grain size analyses

The results of the tests are presented in Appendix C of the Geotechnical Investigation report (RTF&A, 2012c).

5.4.3 Additional Geotechnical Evaluation

5.4.3.1 Purpose of Additional Geotechnical Evaluation

The Additional Geotechnical Evaluation (RTF&A, 2014a) evaluates two additional cut slopes and modification of one previously proposed cut slope for the updated 2014 Excavation Plan (RGF&A, 2014a) and also evaluates cut slopes that would be created for potential improvements in the Set-Aside Area and three Potential Borrow Areas.

5.4.3.2 Project Description of the Additional Geotechnical Evaluation

As described in Section 2, the 2014 Excavation Plan revisions are primarily associated with the future landfill entrance facility and the Future Potential Conversion Technology Set-Aside Area (herein referred to as the "Set-Aside Area"). The landfill entrance facility will be located in the southwest corner of the CCL site, northwest of the intersection of SR-126, also known as Henry Mayo Drive in the vicinity of CCL, and Wolcott Way. It will include a new entrance road, scales, gatehouse, and administration building. The new entrance road alignment will extend westerly from the current intersection of Franklin Parkway and Wolcott Way, extending west-southwesterly toward the current landfill entrance. The 2011 Excavation Plan indicated the grading of two cut slopes at the west end of the entrance facility. Revisions to the entrance facility, as depicted on the 2014 Excavation Plan, indicate two additional cut slopes, and modification of one of the previously proposed cut slopes. The Set-Aside Area will be located within a southerly-draining steep-walled canyon (herein referred to as "Wolcott Canyon") located immediately north of the intersection of Wolcott Way and Franklin Parkway. Potential grading for the Set-Aside Area will include construction of a near-level pad at approximate elevation 1,025 feet above mean sea level (msl), with associated cut and fill slopes surrounding the pad. The Set-Aside Area pad will be accessible by way of road extending from the north end of Wolcott Way to the southwest corner of the graded pad.

The 2011 Excavation Plan indicated Potential Borrow Area cut slopes along the northern and northwestern walls of Wolcott Canyon. The 2014 Excavation Plan includes an additional Potential Borrow Area cut slope and pad southwest of the Set-Aside Area pad. The grading associated with the 2014 Excavation Plan is indicated Figures 5-10a and 5-10b.

5.4.3.3 Geotechnical Evaluation

The geotechnical evaluation was performed to provide additional temporary slope stability calculations for Cut Slope CS-7 and to assess the impact of the site geologic and geotechnical conditions relative to the revised MPR development at CCL, as depicted on the 2014 Excavation Plan. This included evaluating the stability of proposed new cut slopes. Additionally, a preliminary evaluation is provided of the potential grading of the Set-Aside Area and Potential Borrow Area slopes.

The geologic conditions within the site are shown on the Geotechnical Map (Figures 5-10a and 5-10b). The geologic data presented in the 2012 Hydrogeologic Report (RTF&A, 2012b) were slightly modified to reflect new findings from studies post-dating the 2012 report, changed geologic interpretations, and/or corrections. Specifically, the depiction of the inactive faulting identified in East Canyon was revised, based on the 2006 fault study (RTF&A, 2006b) and adjusted geologic contacts in the areas of Cell 5 and future Cell 6, based on additional geotechnical work (RTF&A, 2012d, 2012e, and 2014a). The adjusted geologic contacts were mapped using the March 12, 2013 aerial survey prepared by Cooper Aerial Survey Co. From a geotechnical standpoint, the most significant plan revisions relate to the grading proposed along the north side of the landfill entrance facility in which two new cut slopes (designated as Cut Slopes CS-26 and CS-27) are proposed, and a previously planned cut slope (Cut Slope CS-20) will be relocated and reduced in height. The three cut slopes are indicated on Figures 5-10a and 5-10b.

5.5 Regional Setting

5.5.1 Topography

The regional topography and CCL location are shown in Figure 5-1. CCL is located in the Santa Clara River Basin, approximately 3 miles west of Castaic Junction in Los Angeles County, California. The landfill site is located in the hills along the northern edge of the Santa Clara River Valley. The regional topography is influenced by the steep, rugged terrain of the Piru Mountains, which exhibit prominent and variably oriented ridges and canyons. The Santa Clara River provides regional drainage, flowing west-southwest along SR-126 to the south of CCL. The Santa Clara River Valley bisects the local terrain with a level and relatively extensive floodplain winding through otherwise rugged topography.

5.5.2 Geology

Figure 5-2 shows the regional geology and surface water drainages of the Santa Clara River watershed. CCL is located at the eastern end of the Ventura geologic basin within the Transverse Ranges geomorphic province of California. The Ventura basin consists of a narrow, elongate sedimentary trough extending from Santa Barbara Channel on the west to the San Gabriel Fault on the east. The axis of the trough trends east-west, reflecting the overall east-west trend of the Transverse Ranges, and generally coincides with the Santa Clara River Valley and Santa Barbara Channel. The Ventura basin has been an area of subsidence and sediment accumulation since the beginning of the Tertiary period, with the present trough-like form developing near the beginning of the Miocene epoch (Winterer and Durham, 1962).

5.5.2.1 Geologic Structure

The structure of the Ventura basin is defined as a highly folded “synclinorium” formed by north-south compressional forces (Kew, 1924) and containing a maximum 50,000± feet of marine and nonmarine Tertiary- through Quaternary-age sediments (Bailey and Jahns, 1954). Two main periods of general deformation of the Ventura basin are indicated by the regional geologic structure: one in middle to late Miocene (represented by deposition of the Modelo Formation), and the other during the Pleistocene epoch, after deposition of the Plio-Pleistocene Saugus Formation (Kew, 1924; Winterer and Durham, 1962; Yeats et al., 1994). The flanks of the Ventura basin synclinorium are broken by a series of large reverse/thrust faults including the Santa Susana and Oak Ridge faults on the southern flank, and the Red Mountain and San Cayetano faults on the northern flank (Bailey and Jahns, 1954; Yeats et al., 1994). The San Gabriel Fault, the dominant geologic feature in the Santa Clarita Valley, forms the eastern Ventura basin boundary and separates the Ventura basin from the structurally similar Soledad basin.

5.5.2.2 Stratigraphy

Sedimentary rock units making up the eastern Ventura basin include approximately 2,000 feet of undifferentiated middle to late Eocene age rocks; 1,000± feet of the middle Miocene age Topanga Formation; 5,000± feet of the late Miocene age Modelo Formation; 4,000± feet of the late Miocene to early Pliocene age Towsley Formation; 5,000± feet of the Pliocene age Pico Formation; and 7,000± feet of the Plio-Pleistocene Saugus Formation (Winterer and Durham, 1962). The undifferentiated Eocene units and the Topanga, Modelo, Towsley, and Pico formations are composed of marine sediments; the Saugus Formation is composed of interfingering shallow-water marine, brackish water, and nonmarine units (Kew, 1924; Winterer and Durham, 1962). These Tertiary period rocks rest unconformably on pre-Cretaceous age metamorphic and igneous basement rocks of the San Gabriel Mountains.

Within the Santa Clarita Valley, the primary sedimentary rock formations are the Pico and Saugus formations. The Pico Formation outcrops along the northern flanks of the Santa Susana Mountains and in the Hasley Canyon-Val Verde area (Figure 5-2). The Saugus Formation overlies the Pico Formation and comprises most of the hills of the valley between Newhall and Castaic. These two formations have been deformed into a series of closely spaced anticlines and synclines whose moderately to steeply dipping flanks are broken by the Holser Fault and cut off diagonally by the San Gabriel Fault (Bailey and Jahns, 1954). Other geologic materials exposed

within the valley include Pleistocene fanglomerate deposits of the Pacoima Formation (exposed in the southern portion of the valley) (Oakeshott, 1958), sporadic remnant terrace deposits of Pleistocene age, and Holocene alluvium mantling the valley floor.

Pico Formation: The Pico Formation generally consists of siltstone and fine-grained silty sandstone, with lesser amounts of mudstone and conglomerate, approximately 5,000 feet thick in the vicinity of the site. Locally, the Pico Formation represents nearshore- to offshore-marine depositional settings. Near the contact with the overlying Saugus Formation, some Pico beds also represent nonmarine fluvial environments of deposition. The Pico Formation rests conformably above the late Miocene to early Pliocene age Towsley Formation.

Saugus Formation: The Saugus Formation consists of lenticular, loosely consolidated conglomerate, conglomeratic sandstone, and sandstone interbedded with siltstone, mudstone, and claystone approximately 7,000 feet thick in the vicinity of the site. These rock types characterize principally fluvial sequences of deposition. The Saugus Formation rests conformably above and is locally gradational with the Pico Formation.

Structure of Pico and Saugus Formations: Strata of the Saugus and Pico formations form east-west to southeast-trending open to close folds, which plunge gently to the east. These folds are related to the north-south compressional forces associated with the Holser Fault system, approximately 1,000 feet north of the site.

5.5.3 Seismicity and Faults

Regional faults and earthquake epicenters are shown in Figure 5-3 as mapped by CGS. Local faults in the vicinity of CCL are shown in Figure 5-4.

As part of static and seismic slope stability analyses for CCL by Golder (2012), Dr. Norman Abrahamson prepared an updated seismic hazard report for the site. The seismic hazard report is based on direction previously provided by RWQCB, requiring that permanent landfill slopes be designed to withstand the PGA associated with the MCE, and interim landfill slopes be designed to withstand the PGA having a 10 percent probability of exceedance in 5 years.

The following is summarized from Dr. Abrahamson's 2010 seismic hazard report, which is included in the landfill slope stability analyses, prepared by Golder (Golder, 2012).

> *The Chiquita Canyon site is located in a highly faulted region near the base of the San Gabriel Mountains in Southern California. Based on the long term slip-rates, historical activity, and proximity to the site, the faults that will have a significant effect on the probabilistic ground motions are the Holser, Del Valle, Santa Fellicia, San Gabriel, Oakridge, San Cayetano, Santa Susana, Simi, Sierra Madre Thrust fault zone (San Fernando, Dunsmore, Sierra Madre, Duarte, Claremont, and Cucamonga segments), and the San Andreas Fault. The 1994 Northridge earthquake, which occurred on a blind thrust fault, is also considered in the analysis. These significant seismic sources are discussed below. There are many additional faults within 100 kilometer (km) (63 miles) of the site; however, their contribution to both the probabilistic and deterministic ground motions is less significant.*
>
> ***Seismic Source Characterization***
>
> *The Chiquita Canyon Landfill site is located 1 km (0.6 miles) from both the Holser and Del Valle faults in Southern California. The following faults are all within approximately 20 km (12.5 miles) of the site: Oakridge, San Cayetano, Sierra Madre, Santa Susana, Northridge, San Gabriel, and Simi-Santa Rosa. The San Andreas fault is located approximately 33 km (21 miles) east of the site. Due to their close distance and activity rates, these seismic sources control the seismic hazard at the site.*

Brief descriptions of the significant sources are given below.

Holser, Del Valle, and Santa Fellicia Faults

There are three small faults close to the site: Holser, Del Valle, and Santa Fellicia. The faults are between 8 and 16 km (5 and 10 miles) long. The Holser fault is the closest fault to the Chiquita Canyon Landfill site with a surface outcrop located approximately 1 km (0.6 miles) northwest of the site. There have been no historical earthquakes with magnitude greater or equal to 5.0 associated with the Holser, Del Valle, and Santa Fellicia faults.

The mean characteristic magnitudes of 6.6 and 6.5 for the Holser fault was estimated based on a down-dip width of 22 km (14 miles) and a total fault length of 16 km (10 miles) from the Hanks and Bakun and Wells and Coppersmith models, respectively. The mean slip-rate of 0.4 millimeters/year (mm/yr). The fault mechanism is assigned as a reverse fault.

San Gabriel Fault

The San Gabriel fault is located approximately 7 km (4.4 miles) northeast of the fault. The fault has a total length of about 73 km (45.6 miles) with predominately strike-slip and reverse slip motion dipping to the northeast (i.e., away from the site). There have been no historical earthquakes with magnitude greater or equal to 5.0 associated with the San Gabriel fault. The two estimates of mean characteristic magnitudes are 7.2 (HB, 2008) and 7.0 (WC, 1994). The slip-rate for the San Gabriel fault is 1.0 mm/yr.

Oakridge Fault (Offshore Model)

The Oakridge fault is located approximately 9 km (5.6 miles) west of the site. The Oakridge fault has a total length of about 97 km (60.6 miles) with oblique slip motion dipping to the north. There have been no historical earthquakes with magnitude greater or equal to 5.0 associated with the Oakridge fault. The mean maximum estimate is 7.1 from both magnitude-area models based on a fault width of 13 km (8 miles). The slip-rate is 3.0 mm/yr.

San Cayetano Fault

The San Cayetano fault is located approximately 17 km (10.6 miles) west of the site. This fault has a total length of about 45 km (28 miles) with oblique slip motion dipping to the north. The fault width is estimated to be 14 km (8.8 miles) which leads to mean characteristic magnitudes of 7.1 (HB, 2008) and 7.0 (WC, 1994). There have been no historical earthquakes with magnitude greater or equal to 5.0 associated with the San Cayetano fault.

Santa Susana Fault

The Santa Susana fault is located about 9 km (5.6 miles) south of the site. The Santa Susana fault is a north dipping thrust fault with a dip angle of 55 degrees. The fault has a total length of 32 km (20 miles) with a downdip width of 14 km 8.8 miles). Mean characteristic magnitude values for the Santa Susana fault are, 6.7 (HB, 2008), and 6.5 (WC, 1994). There have been no known historical earthquakes associated with the Santa Susana fault. The estimated slip-rate for the Santa Susana fault is 5.0 mm/year.

Simi Fault

The Simi fault is part of the Simi-Springfield-Camarillo fault system. It is located approximately 12 km south of the site. This fault system has a total fault length of about 45 km (28 miles) with reverse motion on a north dipping fault. There have been no historical earthquakes with magnitudes greater or equal to 5.0 on this fault system. Based on a fault width of 14 km (8.8 miles), the two mean characteristic magnitude values are 6.7 (HB, 2008) and 6.5 (WC, 1994). The slip-rate for this fault is 1.0 mm/yr.

Sierra Madre Thrust Zone

The Sierra Madre Thrust zone consists of several east-west trending thrust faults: San Fernando Fault, Dunsmore Fault, Sierra Madre Fault, Duarte Fault, Claremont Fault, and Cucamonga Fault. The site is located closest to the San Fernando segment, which is about is 23 km (14.4 miles) to the southeast. The San Fernando segment has a fault length of about 20 km (12.5 miels). Based on a fault width of 14 km (8.8 miles), the mean characteristic magnitudes for the Sierra Madre Thrust zone are 7.1 (HB, 2008) and 7.2 (WC, 1994).

The largest historical earthquake on the Sierra Madre Thrust zone was the 1971 San Fernando earthquake with a magnitude of 6.6. This event ruptured the San Fernando segment. The slip-rate for the Sierra Madre Thrust zone is 2.0 mm/yr.

1994 Northridge Event (Blind Thrust)

The 1994 Northridge earthquake (moment magnitude 6.7) occurred on a blind thrust fault located east of the Chiquita Canyon Landfill site. This fault dips in the opposite direction as the 1971 San Fernando earthquake and so it is not associated with the San Fernando fault. The rupture occurred at a depth of 20 km (12.5 miles) at the southeast end and at a depth of 6 km (3.8 miles) at the northern end. The closest distance from the rupture to the site is about 10 km (6.3 miles). Based on an estimated fault length and fault width of 31 km (19.4 miles) and 18km(11.2 miles), respectively, the mean characteristic magnitudes are 6.7 (HB, 2008) and 7.0 (WC, 1994).

San Andreas Fault

The San Andreas fault is located approximately 32 km (20 miles) northeast of the site. This section of the San Andreas fault is called the Mojave section. The San Andreas fault is a predominately right-lateral strike-slip fault extending from Cape Mendocino in Northern California, south to Mexico. The northern and southern sections of the fault are divided by the central creeping section south of Hollister to Parkfield. The southern half of the San Andreas fault is further segmented near San Bernardino at the junction with the San Jacinto Fault. There are four segments of the San Andreas Fault between the creeping section and the San Jacinto Fault junction: Parkfield, Cholame, Carrizo, and Mojave. These four segments may rupture independently or simultaneously.

The largest historical earthquake on this southern section of the San Andreas Fault was the 1957 Fort Tejon earthquake with a magnitude of 7.9. This event was caused by the simultaneous rupture of the Parkfield, Cholame, Carrizo, and Mojave segments. The mean characteristic magnitude was assumed to 8.0 based on a fault length of 254 km (160 miles) and a fault width of 15 km (9.4 miles).

5.5.4 Hydrogeology

5.5.4.1 Groundwater Basins in the Santa Clara River Drainage

Figure 5-5 shows the groundwater basins within the Santa Clara River drainage. From east to west, in the general direction of surface water and groundwater flow, the groundwater basins are the Santa Clara River Valley East, Piru, Fillmore, Santa Paula, Mound, Oxnard Forebay, and the Oxnard Plain. CCL is located at the western end of the Santa Clara River Valley East groundwater basin, which is described by the California Department of Water Resources (DWR) in Bulletin 118 (DWR, 2003). A summary of the Santa Clara River Valley East groundwater basin is provided below based on the description in Bulletin 118.

5.5.4.2 Santa Clara River Valley East Subbasin

The Santa Clara River Valley East subbasin is bordered on the north by the Piru Mountains, on the west by impervious rocks of the Modelo and Saugus formations and a constriction in the alluvium (California Department of Public Works [DPW], 1933), on the south by the Santa Susana Mountains, and on the south and east by the Gabriel Mountains. The surface is drained by the Santa Clara River, Bouquet Creek, and Castaic Creek. Average annual precipitation ranges from 14 to 16 inches.

Water-Bearing Formations

Groundwater is found in alluvium, terrace deposits, and the Saugus Formation. Groundwater in the subbasin is generally unconfined in the alluvium, but may be confined, semiconfined, or unconfined in the Saugus Formation (Slade, 2002). The groundwater elevation contour map for the alluvial system is shown in Figure 5-6 for Spring 2000 data (Slade, 2002).

Alluvium: Holocene age alluvium consists of unconsolidated, poorly bedded, poorly sorted to sorted sand, gravel, silt, and clay with cobbles and boulders. These deposits are thickest below the channel of the Santa Clara River and thin laterally away from the channel (Slade, 1990; DWR, 1993). The maximum reported thickness is 240 feet; and specific yield is estimated to range from about 9 to 19 percent (Slade, 2002).

Terrace Deposits: Pleistocene age terrace deposits consist of crudely stratified, poorly consolidated, weakly cemented, gravel, sand, and silt (Slade, 2002). They can be found on the low-lying flanks of the foothills and upper reaches of the Santa Clara River tributaries. Terrace deposits attain a maximum thickness of 200 feet near Saugus, Agua Dulce, and Acton (Slade, 1990; DWR, 1993). These deposits generally lie above the water table and likely have limited ability to supply groundwater to wells (Slade, 2002).

Saugus Formation: The late Pliocene to early Pleistocene age Saugus Formation consists of approximately 8,500 feet of poorly consolidated, weakly indurated, poorly sorted, sandstone, siltstone, and conglomerate. The lower portion of the Saugus Formation is termed the Sunshine Ranch Member, which consists of as much as 3,500 feet of sand and silt deposited in a brackish marine to terrestrial environment (Slade, 2002). Groundwater is not widely produced from this member for municipal and irrigation uses because well yield is typically low, about 100 gallons per minute, and the groundwater can be brackish (Slade, 2002).

The upper member of the Saugus Formation contains lenses of conglomerate and sandstone interbedded with sandy mudstone deposited in a terrestrial environment (Slade, 2002). Wells in the upper member typically have higher yields, reaching more than 3,000 gallons per minute, and better water quality than the Sunshine Ranch Member (Slade, 2002). The maximum depth to the base of fresh water is about 1,500 feet northeast of the San Gabriel Fault, 5,500 feet between the San Gabriel and Holser faults, and about 5,000 feet southwest of the Holser Fault (Slade, 2002). Specific yield is estimated to range from about 5 to 8 percent (Slade, 2002).

Non-Water-Bearing Formations

Underlying the above water-bearing formations in the Santa Clarita Valley are a series of consolidated, older, cemented sedimentary and crystalline rocks of Tertiary geologic age or older. For the most part, the sedimentary rocks are exposed along the flanks of the hills and mountains that border the Santa Clarita Valley, while the geologically older crystalline metamorphic and igneous rocks crop out in the upper watershed areas, including the San Gabriel Mountains. The older rocks immediately underlying the Saugus Formation in the vicinity of CCL are the Pico Formation, which is composed of siltstone, sandstone, and minor claystone. These fine-grained materials have low permeability, do not yield substantial quantities of water to wells, and are generally considered barriers to groundwater flow.

Restrictive Structures

The San Gabriel and Holser faults cross through the subbasin and displace the Saugus Formation, but not the Quaternary age alluvial deposits. Displacement on the San Gabriel Fault produced uplift and subsequent erosion of much of the upper member of the Saugus Formation north of the fault. The Saugus Formation also is displaced upward on the south side of the Holser Fault, although groundwater in the Saugus Formation does not appear to be affected by this fault (Slade, 2002). Groundwater moving through the alluvium is not affected by these faults (DWR, 2003; Slade, 2002).

Recharge Areas

The alluvial aquifer is recharged chiefly by infiltration of runoff waters in the Santa Clara River and its tributaries (DWR, 1968 and 1993), with additional natural recharge from percolation of rainfall to the valley floor and subsurface inflow (Slade, 2002). Additional recharge is from percolation of excess irrigation water applied to urban landscaping and reclaimed water discharged into the Santa Clara River channel (Slade, 2002). Recharge to the Saugus Formation is from infiltration of rainfall on the exposed formation and percolation of water from the alluvial aquifer (Slade, 2002). Discharge is through pumping for municipal and irrigation uses and consumption by phreatophytes and outflow to the Santa Clara River in the western part of the subbasin (Slade, 2002).

Groundwater Level Trends

Groundwater levels in the alluvium have been relatively stable from about 1970 through 2000 (Upper Santa Clara Valley Water Committee, 2000). During this period, depth to groundwater varied from about 13 to 37 feet in the western, 10 to 50 feet in the central, and 15 to 100 feet in the eastern parts of the subbasin (Slade, 2002). Water levels tend to follow long-term precipitation patterns by dropping during periods of low rainfall and recovering during periods of high rainfall. Groundwater levels in the Saugus Formation have been essentially constant during 1970 through 2000 (DWR, 2003). Groundwater flow in the subbasin is southward and westward and follows the course of the Santa Clara River (Slade, 2002).

Groundwater Quality

Groundwater in the alluvial aquifer varies from calcium bicarbonate character in the east to calcium sulfate character in the western part of the subbasin (Slade, 2002). Nitrate content decreases to the west, and total dissolved solids (TDS) content increases from about 550 to 600 milligrams per liter (mg/L) in the east to about 1,000 mg/L in the west (Slade, 2002). Groundwater in the Saugus Formation aquifer is calcium bicarbonate character in the southeast, calcium sulfate in the central, and sodium bicarbonate in the western parts of the subbasin (Slade, 2002). TDS content in the Saugus Formation aquifer ranges from about 500 to 900 mg/L (Slade, 2002). Water sampled from 59 public supply wells show an average TDS content of 695 mg/L in the subbasin and a range of 300 to 1,662 mg/L.

5.6 Local Setting

5.6.1 Topography

The natural ridgelines rise 300 to 600 feet above the canyon floors within the CCL property. The landfill development operations have reduced the length of some slopes and provided more gentle terrain in some areas. These landfill activities have largely retained the perimeter ridgelines and produced an amphitheater-like topography that opens to the south. Onsite elevations range from approximately 1,600 feet msl in the northwestern corner to 900 feet msl at the canyon drainage outlets.

Topography to the north, west, and east of the site is characterized by east-west-oriented, steep-sided canyons, with slopes that approach 1:1, and in some cases are nearly vertical. The relatively flat terrain immediately south and southeast of the site defines the limits of the Santa Clara River floodplain.

5.6.2 Geology

Geologic mapping of the site was previously performed by RTF&A in 2003 and 2004 as part of the Slope Stability Study and Geologic Fault Study for East Canyon (RTF&A, 2006b and 2006c). Additional geologic mapping was performed during the 2010 and 2011 site explorations by RTF&A. The geologic units identified within the site during the geologic mapping are discussed below.

The site geology was characterized from the recent and previous site investigations that included geologic mapping of natural exposures and cell excavations; geologic mapping and logging of dozer cut and trench exposures; soil and rock samples taken from onsite borings and test pits; and geologic borings drilled for various geologic/geotechnical explorations, gas probes, piezometers, and groundwater monitoring wells.

The geologic data have been previously reported in the Solid Waste Assessment Test (SWAT) Report (HLA, 1987), Geologic/Hydrogeologic Report (EMCON, 1990a), CCL Joint Technical Document (Shaw EMCON/OWT, Inc., 2003; Appendices E, F, and I), slope stability report (RTF&A, 2006b) and geologic fault study (RTF&A, 2006c) for East Canyon, fault and geologic mapping reports for the Main Canyon (EMCON, 1990b, 1990c, 1997a, and 1997b), well/probe installation reports (RTF&A, 2003c, 2004a, 2005a, 2009a, 2010d, and 2010e), and geotechnical investigations for the South Main Canyon (RTF&A, 2009b), Main Canyon (GeoLogic Associates, 2005a, 2005b, and 2005c), and North Canyon (RTF&A, 2010b). The known exploratory excavations (borings, test pits, and trenches) are shown on a location map (Figure C-1, Appendix C of the Hydrogeologic Report [RFT&A, 2012b]) that also indicates (by color) the consulting firm that reported on the exploration. The exploratory boring logs, as-built well construction details, and trench and test pit logs are provided in digital format (portable document format [pdf]) on compact disc [CD]), Appendix C). The CD files are grouped by consultant and further subdivided (bookmarked in Adobe) by type of excavation (groundwater wells, piezometers, gas probes, borings, or test pits and trenches), then listed in ascending alphabetical and numeric order.

Figure 5-7 shows the generalized geology in the vicinity of CCL as regionally mapped by Dibblee (1993). Figure 5-8 is a site Geologic Map of the CCL site, and Figure 5-9 presents detailed cross-sections across the overall CCL site. Figure 5-10a is a site geotechnical map for the North and East Canyon Excavation Area, and Figure 5-10b is a geotechnical map for the South Main Canyon and Entrance Road Area. Figures 5-11a and 5-11b present detailed geologic cross-sections in these areas. These geotechnical maps and cross-sections were originally prepared for the Geotechnical Investigation (RTF&A, 2012c). The geotechnical maps (Figures 5-10a and 5-10b) are updated from the Additional Geotechnical Evaluation (RTF&A, 2014a).

The site is situated on the northerly limb of the Ventura basin "synclinorium," approximately 1,000 feet south of the Holser Fault. The Holser Fault is a regional structure and may branch from the active San Gabriel Fault (Winterer and Durham, 1962). Data compiled from oil company well logs indicate that the Holser Fault is a south-dipping reverse fault with approximately 2,200 feet of dip-slip separation within the area of the Castaic Junction Oil field (Stitt, 1986). The Holser Fault post-dates deposition of the Pico Formation and is believed to be a "backthrust" of a subsurface thrust fault that represents the intersection of the San Cayetano and Santa Susana faults at depth (Yeats et al., 1994). Weber (1979) states that there is no clear evidence of Holocene activity along the Holser Fault, but "plentiful evidence" that activity has occurred in the past 100,000 years. Geolabs (2007) recently conducted a surface fault rupture hazard assessment for the Holser Fault within Castaic and concluded that the last known movement on the Holser Fault was approximately 40,000 to 100,000 years ago. Studies completed by Allen E. Seward Engineering Geology (Seward, 1986 and 1993) examined the Holser Fault for Holocene activity in the Hasley Industrial Park, north of the site. Seward (1986) concluded that while deformation of the fault has clearly affected Quaternary sediments of the Saugus Formation, no offset has been identified in the overlying Holocene sediments.

The geologic structure beneath the site is dominated by four subparallel northwest-southeast trending, through-going folds. The folds are related to the north-south compressional forces within the hanging wall of the Holser Fault system, which lies north of the study site. The axial traces of the folds are shown on the Geologic Map, Figure 5-8. Two of the through-going folds, consisting of an anticline to the south and a syncline to the north, transect the North and East Canyon Excavation Area.

The soil and bedrock materials encountered within the site consist of manmade deposits, alluvium, landslide debris, terrace deposits, and bedrock units of the Saugus and Pico formations. The various geologic units exposed within the landfill are depicted on the 1 inch = 200 feet Geologic Map, Figure 5-8. Units specific to the North and East Canyon Excavation Area and the South Main Canyon Basins/entrance road are presented on the 1 inch = 100 feet Geotechnical Maps (Figures 5-10a and 5-10b). A description of each unit is presented as follows:

Manmade Deposits (af, afr, afs, and cef): Manmade deposits consist of uncompacted artificial fill (map unit "af") and compacted (or certified) engineered fill (map unit "cef") associated with past grading activities onsite, and artificial fill materials related to landfill refuse disposal activities including stockpile fill (map unit "afs") and

refuse fill (map unit "afr"). The fill materials are composed primarily of reworked Pico and Saugus Formation units and, in the case of the refuse fill, compacted municipal solid waste and associated cover materials primarily derived from reworked Pico and Saugus Formation materials. Stockpile fill materials are located along the west side of the Main Canyon and include older fill and more recent stockpile fill. Certified engineered fill exists east, northeast, and south of the property within the United States Postal Service Facility, Valencia Commerce Center Industrial Park, and along Wolcott Way, respectively.

Alluvium (Qal): Holocene age alluvium ("Qal") is present in the canyons and major drainage courses within the site, and as Santa Clara River floodplain deposits adjacent to SR-126. As observed, the alluvium generally consists of sand and silty sand with scattered gravel and cobbles, derived from local bedrock exposures. The alluvium is generally loose to moderately dense and uncemented.

Older Alluvium (Qoa): Pleistocene age (older) alluvium ("Qoa") is limited to the southerly draining tributary in the East Canyon area, immediately west of landslide Qols A. The older alluvium is composed of unconsolidated to poorly consolidated mixtures of sand, gravel, silt, and clay.

Terrace Deposits (Qt): Pleistocene age terrace deposits occur onsite along SR-126 southeast of the existing landfill entrance, and as isolated and limited remnant stream channel deposits. The terrace deposits are typically composed of poorly consolidated deposits of coarse sand, gravel, and silt with cobbles and, to a lesser extent, boulders.

Landslide Debris (Qd, Qls, Qols): Three types of deposits attributable to past slope failure have been identified at the site; these consist of debris flow deposits (Qd), Holocene landslides (Qls), and a Pleistocene landslide (Qols). The debris flow deposits are derived from weathered bedrock and slope wash materials, and consist of unconsolidated sand, silt, and clay. These deposits typically occur within ravines and on slopes steeper than approximately 2:1.

Materials designated as Holocene landslide debris range from poorly consolidated, highly weathered rock materials to relatively coherent, moderately hard to hard sandstone, siltstone, and claystone units derived from the underlying Saugus or Pico formations. Depending on the amount of movement, the entire landslide or the upper portions of the landslide debris are disturbed.

The central portion of the East Canyon is mantled by an older landslide deposit (Qols) that appears to be composed of older alluvium as well as Pico and Saugus Formation materials.

Saugus Formation (QTs): Plio-Pleistocene age nonmarine sedimentary rock units of the Saugus Formation (map unit "QTs") outcrop in the eastern and southern portions of the site. Saugus Formation units typically consist of poorly to moderately well-bedded, light yellowish brown to pinkish gray, fine- to coarse-grained, pebble- to cobble-bearing sandstone and silty sandstone with moderate brown siltstone to clayey siltstone. This formation is poorly to moderately well-bedded and ranges from friable to moderately hard. The fine-grained clayey beds, typical of the lower Saugus Formation, represent some of the weakest material within the formation.

Pico Formation (Tp): Marine sedimentary rock units of the Pliocene age Pico Formation (map unit "Tp") are exposed in the northern and western portions of the site. These units comprise grayish orange to light gray sandstone, yellowish gray to yellowish brown siltstone, and limited brownish gray fossiliferous siltstone and sandstone. These units range from soft near the surface to moderately hard at depth. The fossiliferous beds tend to be more resistant than surrounding units, as indicated by the prominent, ridge-forming fossiliferous siltstone ("Ridge-Forming Coquina") near the mouth of North Canyon.

The Pico formational contact with the overlying Saugus Formation is interfingering and gradational, and not always readily discernible, particularly in exploratory borings. Within the site and for the purposes of this study, RTF&A has defined the top of the Pico Formation as the first appearance of fossiliferous beds. Where fossiliferous beds are missing from the stratigraphic section, the contact has been defined using color as an indicator. In particular, the presence of Munsell hues "5Y" is more common within the Pico Formation and may indicate the approximate contact with the Saugus Formation.

5.6.3 Hydrogeology

Figure 5-12 shows the groundwater elevation contours that are based on data collected from this monitoring system for the fourth quarter 2011 (RTF&A, 2011c). The monitoring wells and piezometers for the proposed CCL groundwater monitoring system are shown in Figure 5-13. The physical hydrogeology of CCL is summarized below. Groundwater quality is discussed in Chapter 7.0, Water Quality.

The groundwater monitoring network currently consists of 14 monitoring wells (DW-1, DW-3, DW-7, DW-8, DW-12, DW-14, DW-15, DW-16, DW-17, DW-18, DW-20, DW-21, DW-28, and PZ-4) and four vadose zone points (VP-1, LP-1, SW-1, and GP-9). Additional points DW-9, DW-23, DW-24, DW-25, DW-26, DW-27, PZ-3, PZ-5, PZ-6, PZ-7, GP-15, GP-16, GP-17, GP-21, GP-22, GP-24, and GP-25 are sounded for water levels only. Wells DW-24, DW-26, PZ-5, and PZ-6, which are located northeast of the current landfill area and are not part of the groundwater monitoring system specified in WDR Order No. 98-086, have been sampled and analyzed for a partial constituents of concern (COC) list for potential future use as background water quality data. Monitoring points DW-8, DW-25, DW-27, DW-28, PZ-5, and PZ-6 are completed within the Pico Formation, and the remaining wells and piezometers are monitoring the Saugus Formation. Wells DW-27and DW-28 were installed after the July 2010 monitoring event as part of an exploratory drilling program (RTF&A, 2010d).

Quarterly monitoring and semi-annual reporting are performed as required by the MRP, which contains the requirements for groundwater sampling and analysis, and evaluation of analytical results. The monitoring and reporting schedule is as follows.

Semi-annual Period	Reporting Period	Sampling Months	Report Due
First	January - June	January and April	June 30
Second	July - December	July and October	December 31
Annual	January - December		March 1

The groundwater monitoring system for the Proposed Project is shown in Figure 5-13 and Table 5-1.

TABLE 5-1
Proposed Project Groundwater Monitoring System
Chiquita Canyon Landfill

Monitored Medium	Downgradient Monitoring Points	Upgradient Monitoring Points
Main Canyon		
Vadose Zone		
	SW-1	VP-2 (GP-29)
Groundwater		
	DW-1	DW-8
	DW-15	DW-9 [GWE]
	DW-16	DW-17
	DW-18	DW-28
	DW-21 [GWE]	
	DW-29	
North and East Canyons		
Vadose Zone		
	VP-3 (DW-30)	VP-2 (GP-29)

TABLE 5-1
Proposed Project Groundwater Monitoring System
Chiquita Canyon Landfill

Monitored Medium	Downgradient Monitoring Points	Upgradient Monitoring Points
Groundwater		
	DW-23	DW-27 [GWE]
	DW-26	DW-28
	DW-30	
	DW-31	
	DW-32	
	DW-33	
	DW-34	
Primary Canyon		
Vadose Zone		
	SW-1	
Groundwater		
	DW-1	DW-16
	DW-7	DW-17
	DW-18	
	DW-21 [GWE]	
	DW-35	
Canyon B		
Vadose Zone		
	VP-3 (DW-30)	
Groundwater		
	DW-30	
	DW-31	DW-14
	PZ-4	

Note:
[GWE] = measured for groundwater elevations only

5.6.3.1 Precipitation and Groundwater Recharge/Discharge

Precipitation, recharge to the groundwater system, and discharge from the groundwater system at CCL occurs as described below.

Precipitation. Local annual precipitation amounts are provided in Table 5-2 and shown in Figure 5-14 on a water-year basis (October through September). Figure 5-14 also shows the annual cumulative departure from average between 1970 and 2014. These data are from regional rain gauges between 1970 and 1997 and from the CCL office rain gauge between 1998 and 2014. CCL rain gauge data are supplemented with regional data when not available.

The average annual rainfall amount from 1970 through 2014 is 14.45 inches (Table 5-2 and Figure 5-14). The annual rainfall of 48.15 inches for the 2004 to 2005 water year represents the highest rainfall amount and is more than triple the average over this period (Table 5-2 and Figure 5-14).

Groundwater Recharge. Recharge to the groundwater system occurs from direct infiltration of precipitation, infiltration of runoff water from precipitation, and subsurface inflow from upgradient groundwater areas.

Groundwater Discharge. Discharge from the groundwater system occurs from evapotranspiration of groundwater and subsurface outflow to downgradient groundwater areas.

TABLE 5-2
Local Annual Precipitation (1970 to 2014)
Chiquita Canyon Landfill

Date From	Date To	Year	Rainfall Season Total (inches)	Cumulative Departure from Average	Location
Oct-70	Sep-71	1971	12.5	-1.95	Castaic Junction, Station No. 1021
Oct-71	Sep-72	1972	8.04	-8.35	Castaic Junction, Station No. 1021
Oct-72	Sep-73	1973	14.77	-8.03	Castaic Junction, Station No. 1021
Oct-73	Sep-74	1974	12.23	-10.25	Castaic Junction, Station No. 1021
Oct-74	Sep-75	1975	11.18	-13.51	Castaic Junction, Station No. 1021
Oct-75	Sep-76	1976	9.08	-18.88	Castaic Junction, Station No. 1021
Oct-76	Sep-77	1977	11.74	-21.59	Castaic Junction, Station No. 1021
Oct-77	Sep-78	1978	31.98	-4.05	Castaic Junction, Station No. 1021
Oct-78	Sep-79	1979	18.16	-0.34	Castaic Junction, Station No. 1021
Oct-79	Sep-80	1980	23.6	8.81	Castaic Junction, Station No. 1021
Oct-80	Sep-81	1981	9.91	4.28	Castaic Junction, Station No. 1021
Oct-81	Sep-82	1982	13.68	3.51	Castaic Junction, Station No. 1021
Oct-82	Sep-83	1983	29.51	18.57	Castaic Junction, Station No. 1021
Oct-83	Sep-84	1984	8.61	12.74	Castaic Junction, Station No. 1021
Oct-84	Sep-85	1985	9.51	7.80	Castaic Junction, Station No. 1021
Oct-85	Sep-86	1986	18.24	11.59	Castaic Junction, Station No. 1021
Oct-86	Sep-87	1987	5.98	3.13	Magic Mtn. Parkway, Station No. 200
Oct-87	Sep-88	1988	17.95	6.63	Magic Mtn. Parkway, Station No. 200
Oct-88	Sep-89	1989	10.37	2.55	Castaic Junction, Station No. 1021
Oct-89	Sep-90	1990	4.71	-7.18	Castaic Junction, Station No. 1021
Oct-90	Sep-91	1991	12.94	-8.69	Castaic Junction, Station No. 1021
Oct-91	Sep-92	1992	22.72	-0.41	Castaic Junction, Station No. 1021
Oct-92	Sep-93	1993	26.76	11.90	Castaic Junction, Station No. 1021
Oct-93	Sep-94	1994	8.2	5.65	Castaic Junction, Station No. 1021
Oct-94	Sep-95	1995	23	14.21	Castaic Junction, Station No. 1021
Oct-95	Sep-96	1996	10.24	10.00	Castaic Junction, Station No. 1021
Oct-96	Sep-97	1997	11.2	6.75	Fairmont, Station No. 042941
Oct-97	Sep-98	1998	36.25	28.56	Fairmont, Station No. 042941
Sep-98	Jun-99	1999	6.80	20.91	CCL Office Rain Gauge
Nov-99	May-00	2000	10.60	17.06	CCL Office Rain Gauge

TABLE 5-2
Local Annual Precipitation (1970 to 2014)
Chiquita Canyon Landfill

Date From	Date To	Year	Rainfall Season Total (inches)	Cumulative Departure from Average	Location
Oct-00	Apr-01	2001	16.65	19.27	CCL Office Rain Gauge, with March/ April from Newhall Station
Nov-01	May-02	2002	5.27	10.09	CCL Office Rain Gauge
Nov-02	May-03	2003	17.55	13.19	CCL Office Rain Gauge
Oct-03	Mar-04	2004	8.35	7.10	CCL Office Rain Gauge
Oct-04	May-05	2005	48.15	40.80	CCL Office Rain Gauge
Sep-05	May-06	2006	16.15	42.50	CCL Office Rain Gauge
Dec-06	Apr-07	2007	2.81	30.87	CCL Office Rain Gauge
Sep-07	Feb-08	2008	14.10	30.52	CCL Office Rain Gauge
Oct-08	Mar-09	2009	10.57	26.64	CCL Office Rain Gauge
Oct-09	May-10	2010	11.75	23.95	CCL Office Rain Gauge
Oct -10	May-11	2011	19.75	29.25	CCL Office Rain Gauge
Oct -11	May-12	2012	6.53	21.33	CCL Office Rain Gauge
Oct -12	May-13	2013	3.22	10.11	CCL Office Rain Gauge
Oct -13	May-14	2014	4.34	0.00	CCL Office Rain Gauge
	Average		**14.45**		

Notes:

Castaic Junction and Magic Mountain Parkway records from Los Angeles County Department of Public Works, Hydrologic Records Division. Fairmont records from Western Regional Climate Center.

Table modified from RTF&A (2012b).

5.6.3.2 Groundwater Occurrence and Hydrostratigraphic Units

Groundwater at CCL is found beneath the site in the sedimentary bedrock of the Saugus and Pico formations, and not in the relatively thin alluvial deposits that are restricted to canyon floors (Figures 5-8 and 5-9). In the Santa Clara River Valley along the southeast property corner, groundwater is also encountered in the higher-permeability, unconsolidated valley alluvium, which overlies the bedrock materials (Figures 5-5 and 5-6). In this river valley, the bedrock and alluvial groundwater systems are interconnected where the base of the saturated valley alluvium rests on the underlying sedimentary bedrock. The two groundwater systems are also connected along the edge of the Santa Clara River Valley where valley alluvium is in lateral contact with the saturated bedrock of the hills that border the valley.

Alluvial Aquifer – Santa Clara River Valley: The alluvial aquifer system is present south of CCL in the lower portion of the Santa Clara River channel alluvium. This lower Santa Clara River channel alluvium aquifer is the main source of agricultural and domestic groundwater for the Santa Clara River Valley. The regional alluvial aquifer consists of relatively high-permeability alluvium about 100 to 200 feet thick (HLA, 1987). The upper 20 percent of the alluvial aquifer contains higher-permeability material than the lower portions (Robson, 1972). The hydraulic conductivities for the lower Santa Clara River alluvial aquifer were estimated from pump efficiency tests and drillers' logs for regional wells, and range from 1.4×10^{-2} to 1.3×10^{-1} cm/sec.

Unsaturated Alluvial Deposits – CCL: The uppermost portion of the Santa Clara River channel alluvium is unsaturated, and this alluvium extends from the river valley onto the CCL site along the floor of three canyons: the Main Canyon that extends from the site entrance to its terminus in the North Canyon, a small canyon north of Wolcott Way, and the East Canyon, which flows into Castaic Creek before reaching the Santa Clara River. The limited extent of these alluvial deposits (Qal) is shown on the site Geologic Map (Figure 5-8). The site alluvial deposits are relatively thin, typically less than about 41 feet in thickness, as illustrated by the geologic sections (Figure 5-9). Laboratory permeability tests of these alluvial deposits show hydraulic conductivities from 2.0×10^{-5} to 1.9×10^{-3} cm/sec (Table 5-3).

TABLE 5-3
Hydraulic Conductivity
Chiquita Canyon Landfill

Well	Lithology	Hydraulic Conductivity (cm/sec)	Source	Method
Alluvial Deposits				
Regional wells (about 200)	alluvium	1.42E-02 to 0.13	Robson, 1972	Pumping test and drillers' logs
A-1 (6 feet)	silty sand (SM)	2.0E-04	HLA, 1987	Lab permeameter
A-2 (16 feet)	silty sand (SM)	2.0E-05	HLA, 1987	Lab permeameter
B-2 (6 feet)	silty sand (SM)	5.4E-05	HLA, 1987	Lab permeameter
C-2 (16 feet)	silt (ML)	1.9E-03	HLA, 1987	Lab permeameter
D-1 (6 feet)	silty sand (SM)	1.0E-04	HLA, 1987	Lab permeameter
D-2 (16 feet)	silty sand (SM)	3.5E-05	HLA, 1987	Lab permeameter
Saugus Formation				
Regional wells (about 100)	ss	2.4E-04 to 4.7E-07	Robson, 1972	Pumping test and E-log approximation
B-1 (16 feet)	ss	4.2E-03	HLA, 1987	Lab permeameter
B-2 (16 feet)	silty ss	3.4E-05	HLA, 1987	Lab permeameter
C-1 (36 feet)	silty ss	8.5E-05	HLA, 1987	Lab permeameter
DW-3	silty ss with gravel	3.0E-04	RTF&A, 2005b	Falling head
		2.9E-04	RTF&A, 2005b	Rising head
DW-9	silty ss	9.2E-04	EMCON, 1990a	Falling head
		1.1E-03	EMCON, 1990a	Rising head
DW-14	ss	1.1E-05	RTF&A, 2005b	Falling head
		1.1E-05	RTF&A, 2005b	Rising head
DW-24	ss, gravelly ss with silty ss	6.5E-05	RTF&A, 2005b	Falling head
		8.1E-05	RTF&A, 2005b	Rising head
DW-26	interbedded silty ss and sandy siltstone	3.2E-05	RTF&A, 2005b	Falling head
		3.6E-05	RTF&A, 2005b	Rising head
PZ-3	ss and pebbly ss	3.2E-05	RTF&A, 2005b	Rising head
PZ-4	ss	2.1E-05	RTF&A, 2005b	Rising head

TABLE 5-3
Hydraulic Conductivity
Chiquita Canyon Landfill

Well	Lithology	Hydraulic Conductivity (cm/sec)	Source	Method
Pico Formation				
DW-8	mudstone with 3 to 6 feet ss interbeds	6.4E-05	EMCON, 1990	Falling head
DW-19	sandy siltstone to sandy claystone	2.4E-06	RTF&A, 2005b	Falling head
		2.5E-06	RTF&A, 2005b	Rising head
PZ-5	silty ss with 7 feet clayey ss interbeds	5.4E-06	RTF&A, 2005b	Falling head
		5.0E-06	RTF&A, 2005b	Rising head
PZ-6	silty ss with 6 feet sandy siltstone	2.5E-06	RTF&A, 2005b	Falling head
		2.8E-06	RTF&A, 2005b	Rising head

Note:

ss = sandstone

Along the Main Canyon, the depth of alluvium encountered in 10 exploratory borings ranges from 17 to 41 feet below ground surface (bgs) (Table 5-4). Groundwater was not observed in the alluvium during the drilling of these borings. Two of these borings were converted to vadose wells: SW-1 near Primary Canyon monitors alluvium and the uppermost Saugus Formation, and RD-1 near Canyon C monitored alluvium prior to destruction of RD-1 in October 2002. The vadose wells were monitored quarterly starting January 1986 (SW-1) and September 1989 (RD-1), and groundwater was not observed in either well during the period ending October 2010 for SW-1 and July 2002 for RD-1.

TABLE 5-4
Base Alluvium vs. Highest Groundwater Depths
Chiquita Canyon Landfill

Location	Well ID	Base Alluvium Depth (feet)	Highest Groundwater Depth (feet)	Approximate Base Alluvium-Groundwater Separation (feet)	Date of Highest Groundwater
Main Canyon	DW-1	21	48.91	27.9	4/1/2005
	DW-2	22	50.91	28.9	4/16/2001[a]
	DW-13	20	38.13	18.1	7/22/1998[a]
	DW-18	17	57.11	40.1	4/16/2001
	DW-20	41	54.75	13.8	6/10/2005
	DW-21	22	62.85	40.9	4/15/2005
	PZ-1	18.5	34.30	15.8	1/19/1993[a]
	PZ-2	17	56.05	39.1	4/22/1998[a]
	SW-1	26	dry	---	---
	RD-1	30	dry	---	---[a]

TABLE 5-4
Base Alluvium vs. Highest Groundwater Depths
Chiquita Canyon Landfill

Location	Well ID	Base Alluvium Depth (feet)	Highest Groundwater Depth (feet)	Approximate Base Alluvium-Groundwater Separation (feet)	Date of Highest Groundwater
East Canyon	DW-3	17	78.12	61.1	4/24/2006
Santa Clara River Valley	DW-7	28	32.64	4.6	3/4/2005

Notes:

Base alluvium depth in feet bgs.

Highest groundwater depth in feet below top of well casing; based on highest groundwater elevations (relative to surveys), not shallowest measured depth to water.

Highest groundwater dates for period ending October 2011.

SW-1 and RD-1 = vadose zone monitoring points

[a]Monitoring points destroyed prior to 2005

DW-2 (destroyed 12/04)

DW-13 (destroyed 10/02)

PZ-1 (destroyed 10/02)

PZ-2 (destroyed 11/99)

In the East Canyon, exploratory boring E-7 (drilled March 10, 1989) encountered 37 feet of unsaturated alluvium above the Saugus Formation, with groundwater found in the Saugus Formation at a depth of 52.5 feet bgs (EMCON, 1990a). Nearby geotechnical borings HS-3-10 (31 feet of alluvium) and HS-4-10 (34 feet of alluvium) also encountered unsaturated alluvium over the Saugus Formation when drilled in summer 2010 (RTF&A, 2012c). Borings for well DW-3 (18 feet of alluvium) and gas probe GP-9 (25 feet of alluvium) encountered unsaturated alluvium. Groundwater is present in well DW-3 at a depth of approximately 90 feet in the underlying Saugus Formation and was absent during the September 1995 drilling of boring GP-9 to a total depth of 85.5 feet bgs.

In the small canyon near Wolcott Way, exploratory boring E-9 (drilled March 13, 1989) encountered 54.5 feet of unsaturated alluvium overlying the Saugus Formation (EMCON, 1990a). Groundwater was encountered beneath the alluvium at a depth of 77 feet in the Saugus Formation.

Near the south property line at the edge of the Santa Clara River Valley, well DW-7 (drilled March 14, 1988) penetrated 28 feet of unsaturated alluvium and was completed as a Saugus Formation monitoring well. Groundwater depths at well DW-7 are greater than 32 feet. To the south and east in the Santa Clara River Valley, exploratory borings B-2-11 through B-5-11 (drilled November 2011) encountered unsaturated alluvium at depths of 24.5 to 49 feet. Groundwater was encountered in the underlying alluvial aquifer at a depth of 49 feet in B-5-11.

The site groundwater monitoring wells and piezometers monitor the Saugus and Pico formations, with well screens installed across the uppermost water-bearing zone as best determined during drilling operations at each location. Ten of these monitoring points penetrated unsaturated alluvium and were completed with screen intervals in the underlying Saugus Formation. The highest recorded static groundwater elevations at all of these points have remained below the base of the alluvial deposits for the monitoring period ending October 2011 (Table 5-4). At the eight groundwater monitoring points in the Main Canyon, the minimum separation between the base of the unsaturated alluvial deposits and static groundwater elevations in the Saugus Formation has been greater than approximately 14 feet. In the East Canyon at well DW-3, the minimum separation between base alluvium and groundwater has been greater than about 61 feet. South of the

property along the edge of the Santa Clara River Valley, the minimum alluvium-groundwater separation has been more than approximately 4 feet at well DW-7. Based on the observed separation between groundwater and the base of alluvium, base flow between groundwater in the Saugus Formation to the alluvial deposits does not appear likely within the Main Canyon or the East Canyon. South of the site at well DW-7, the small separation between groundwater and base alluvium elevations indicates that base flow is likely in this vicinity where saturated Saugus Formation is buried beneath the widespread alluvial deposits along the north flank of the Santa Clara River Valley.

Saugus and Pico Formations – CCL Area: Groundwater occurs in both the Saugus and Pico formations in the CCL area. In these sedimentary rocks, groundwater is present primarily in the intergranular porosity, with the more permeable, coarser-grained sandstone and conglomeratic units yielding more water than the siltstone and finer-grained sedimentary rocks.

Regionally, the Saugus Formation contains many thin zones of low-permeability material that could act as confining layers (Robson, 1972). Near CCL, few production wells produce primarily from the Saugus Formation because the regional alluvial aquifer is the major source for groundwater (EMCON, 1990a). The Pico Formation lies stratigraphically beneath the Saugus Formation, where Pico Formation groundwater is under confined conditions due to the low permeability of the mudstone and siltstone sequences (Robson, 1972). Well surveys show no production wells in the vicinity of the site are completed in the Pico Formation (EMCON, 1990a).

Bedrock hydrogeology may be influenced by the presence of interbedded aquitards, which are the less-permeable lithologies in the sedimentary sequence. In the Saugus and Pico formations at CCL, these less-permeable beds include siltstone, mudstone, and claystone. The Pico Formation also contains less-permeable interbeds of well-cemented, fossiliferous sandstone and siltstone.

The geologic structure may also influence groundwater flow in layered sedimentary rocks, particularly in areas of steeply dipping beds, folds, or faults. At CCL, the bedrock is folded by two major anticline/syncline pairs that generally trend east and plunge to the east, and locally produce steeply dipping beds (Figures 5-8 and 5-9). Geologic Sections A-A’ and B-B’ are transverse to the site geologic structure, and illustrate the overall shape and location of these anticline/syncline pairs, as well as areas of more steeply dipping beds. Geologic Sections C-C’ and D-D’ each parallel the axis of a syncline, and show the gentle eastward plunge of these structures.

The Geologic Map and detailed Geologic Sections were prepared to illustrate geologic and hydrogeologic conditions across the site (Figures 5-8 and 5-9). Geologic contacts, stratigraphic marker beds, mappable lithologic units, and geologic structure were identified by evaluating surface geologic maps, test pit logs, dozer cut logs, and exploratory boring logs, and by conducting additional field mapping where needed. The lithologic units identified as mappable were generally greater than approximately 10 feet thick (drilled thickness), with coarse-grained silty sandstone, sandstone, and conglomeratic sandstone grouped together, and the fine-grained siltstone, mudstone, claystone, and cemented, fossiliferous sandstone grouped separately as potential confining layers, or aquitards. The geologic contacts, marker beds, and lithologic units were correlated across the site using both subsurface and surface lithologic and structural data.

A thick section of predominately fine-grained Saugus Formation units was identified in the central portion of the site, as illustrated (in green) on Geologic Sections B-B’ and D-D’ (Figure 5-9). The overall stratigraphic thickness of this interval is approximately 300 feet, and includes the “DW-6 Siltstone,” with a drilled (vertical) thickness more than 164 feet and an estimated stratigraphic thickness of greater than 129 feet at well DW-6. This fine-grained unit underlies much of Canyon B, the southeast corner of the Main Canyon, and the northeast portion of Primary Canyon.

Within the Pico Formation, a thick section of siltstone more than 194 feet in vertical thickness (with a calculated stratigraphic thickness of greater than 173 feet at well DW-27), was identified as an aquitard beneath the northwest portion of the site, and is illustrated (in purple) on Geologic Sections A-A’ and C-C’ (Figure 5-9). The deepest stratigraphic penetration of this siltstone is at well DW-27, which was drilled through 452 feet of Pico Formation. The boring encountered primarily siltstone below a depth of 197.5 feet, including the “DW-19 Siltstone” unit (the top of which was initially penetrated during drilling of well DW-19 in 1999).

The siltstone beds appear to have very low hydraulic conductivity, based on the slight amounts of groundwater yielded from overnight water checks during the well DW-27 drilling program, the slow well recharge during well development (RTF&A, 2010e), and the continued rise in monthly groundwater elevations 8 months after well development was completed in early August 2010 (Appendix B of the Hydrogeologic Report [RTF&A, 2012b]). Groundwater in the "DW-19 Siltstone" unit is considered to be under confined conditions, with this low-permeability unit acting as an aquitard for potentially deeper water-bearing zones. Within the western portion of the North Canyon, including the vicinity of well DW-27, the uppermost groundwater is found within this aquitard.

5.6.3.3 Depth to Groundwater and Groundwater Elevations

Beneath most of the CCL site, the uppermost water-bearing unit is the Saugus Formation, except in the northwest (Figure 5-8). Groundwater elevation hydrographs are shown in Figure 5-15 for all monitoring wells and piezometers located at CCL. These data are shown in separate groups of hydrographs for the Primary Canyon area, North and East Canyon areas, and for the Pico Formation in Figures 5-16, 5-17, and 5-18, respectively.

Groundwater Elevations

Most Saugus Formation water level measurements are in wells or piezometers with relatively short screens (40 feet or less) and standing water columns of about 40 feet. These groundwater elevations probably represent hydraulic head at the water table where the monitoring point is completed in the uppermost water-bearing zone. However, many of the Pico water level measurement points (DW-8, DW-19, and PZ-5) have standing water columns near or greater than 100 feet, and may be indicative of the hydraulic head measured at depths greater than the water table. Therefore, the groundwater elevations in the northern area are more approximate relative to water table flow conditions (Figure 5-12). The groundwater elevation at well DW-27 is considered to represent confined conditions at depth, and is not part of the contoured data. No groundwater elevations are shown in the western portion of the North Canyon where the uppermost water-bearing unit is the "DW-19 Siltstone" aquitard penetrated by well DW-27.

Saugus Formation: The majority of the groundwater monitoring wells and piezometers are completed in the Saugus Formation, where the depth to groundwater ranges from approximately 33 feet at well DW-7 to 345 feet at well DW-23. Groundwater elevations in Saugus wells vary from near 920 feet msl along the south property line (wells DW-7 and DW-12) to 1,080 feet msl in the East Canyon (wells DW-26 and PZ-7) (Figure 5-12). Seasonal groundwater elevation variations are less than a few feet at most hillside locations, with greater fluctuations (nearly 20 feet) in wells along canyon bottoms, as shown on the hydrographs (Figure 5-18). In spring 2005, groundwater levels in the canyon wells rose almost 10 feet (well DW-1) following the 2004 to 2005 winter rains. At the CCL rain gauge, the annual precipitation of 48.15 inches for October 2004 to May 2005 water year was more than triple the local average annual precipitation for the period from 1970 to 2013 (Table 5-2 and Figure 5-14). The groundwater elevations at most Saugus wells reached historical highs in spring 2005 or spring 2006.

Several exploratory bucket auger borings drilled as part of RTF&A's slope stability/ geotechnical investigations (RTF&A, 2006b; 2009b; and 2012c) encountered perched groundwater conditions. These perched zones typically consisted of several feet of saturated materials at the base of sandstone beds, underlain by fine-grained impermeable claystone and siltstone beds or fault gouge. The more permeable sandstones directly below these perched zones were moist, but not saturated.

Pico Formation: Groundwater is also present in the Pico Formation, which crops out in the northwestern part of the site. In this area, the uppermost groundwater occurs in the Pico Formation. Eight monitoring points (DW-8, DW-19, DW-25, DW-27, DW-28, PZ-5, PZ-6, and PZ-8) are completed in the Pico Formation (Figure 5-18). Groundwater depths range from approximately 72 feet at PZ-6 in the East Canyon to 335 feet at well DW-28 on the slope of the northwest ridgeline. Pico Formation groundwater elevations vary from about 1,105 feet msl in the East Canyon (PZ-6) to 1,219 feet msl in the north canyon (PZ-8) (Figure 5-12). The seasonal groundwater elevation variations are less than a few feet at wells DW-8, DW-19, DW-25, and PZ-5. Piezometer PZ-6, located

in the bottom of the East Canyon along the east-plunging axis of the anticline, showed a greater seasonal groundwater elevation fluctuation of over 10 feet, as illustrated on the hydrographs (Figure 5-17).

5.6.3.4 Hydraulic Properties

The hydraulic properties of the bedrock formations were obtained from in situ pumping tests, rising and falling head (slug) tests, and laboratory testing from various sources (Table 5-3). Hydraulic conductivity, gradient, porosity, and groundwater flow velocity in the Saugus Formation were obtained from various site data.

Saugus Formation: Both regional and site hydraulic conductivity data are available for the Saugus Formation (Table 5-3). The regional permeability of the Saugus Formation (determined from soils, electric log correlations, and pumping tests) ranges between 2.4×10^{-4} and 4.7×10^{-7} cm/sec (Robson, 1972). The hydraulic conductivity of the Saugus Formation at CCL was determined from laboratory permeameter testing of samples from shallow depths in borings HLA B-1, B-2, and C-1 (1987), and from slug tests at wells DW-3, DW-9, DW-14, DW-24, DW-26, PZ-3, and PZ-4 (Table 5-3). Representative in situ hydraulic conductivity values within the saturated zone ranges from 1.1×10^{-3} to 1.1×10^{-5} cm/sec based on slug test results of onsite wells.

Pico Formation: The hydraulic conductivity of the Pico Formation at CCL was determined from slug tests at wells DW-8, DW-19, PZ-5, and PZ-6 (Table 5-3). Representative values for hydraulic conductivity range from 6.4×10^{-5} to 2.4×10^{-6} cm/sec at these points, and are generally less than the Saugus Formation values. Based on the very slow recharge at well DW-27, it appears to have lower permeability than well DW-19 (2.4×10^{-6} to 2.5×10^{-6} cm/sec), which was completed in the upper portion of the "DW-19 Siltstone."

5.6.3.5 Groundwater Flow Direction and Points of Compliance

The October 2011 static groundwater elevations and associated groundwater contours across the site are shown in Figure 5-12, with approximate groundwater flow directions indicated by arrows. Figure 5-19 shows the maximum groundwater elevation together with the Proposed Project excavation plan and landfill limits to illustrate the future POCs and separation between groundwater and waste. The proposed landfill limits for the Proposed Project are also shown. The Proposed Project footprint encompasses South Main Canyon, Main Canyon landfill, and North Canyon with surface drainage to the south, as well as East Canyon with drainage southeast to Castaic Creek. The closed landfill footprints (Primary Canyon and Canyon B) remain the same. The groundwater flow directions and POCs are described below for each of the existing and Proposed Project landfill areas. The POC for each landfill area is a vertical surface located in the hydraulically downgradient limit of the waste management unit and that extends through the uppermost water-bearing zone underlying the unit, as defined by the CCR (Title 27, s 20164).

Main Canyon and Primary Canyon: In the western half of the site, beneath the South Main Canyon, Main Canyon, and Primary Canyon, the general groundwater flow direction is south toward the Santa Clara River Valley. Along the Main Canyon, from the site entrance (well DW-1) north about 2,500 feet, the natural topography appears to direct groundwater flow from the ridges (wells DW-8 and DW-9 to the west, and wells DW-15, DW-16, and DW-17 to the east) to the canyon bottom, where groundwater elevation contours "V" or point up the Main Canyon. Based on these groundwater contours, the interpreted POC for the South Main Canyon and Main Canyon extends from approximately 850 feet southeast of well DW-9 to 700 feet north of well DW-1, following the south edge of the proposed landfill perimeter (Figure 5-19). The POC for Primary Canyon remains unchanged from previous monitoring reports, and follows the south and west landfill perimeter (RTF&A, 2011b and 2011c). POC monitoring in both areas is within the Saugus Formation.

Canyon B: In the Saugus Formation beneath Canyon B, groundwater appears to flow eastward down the canyon toward monitoring points DW-3 and PZ-4, with well DW-14 in a hydraulically upgradient position. The local topography and stratigraphy appear to influence the groundwater flow at Canyon B, with a high ridge (about 1,450 feet msl) south of the canyon and a thick, fine-grained "DW-6 Siltstone" unit along the south side of Canyon B, as shown on geological section B-B' (Figure 5-12). The POC for Canyon B is at the northeastern perimeter of the unit and is unchanged from previous monitoring reports (RTF&A, 2011b and 2011c).

East Canyon and North Canyon: In the East Canyon, south of the anticlinal fold axis, the apparent groundwater flow direction is south. Along the fold axis, the groundwater flows down-plunge to the east through successively higher (younger) lithologic units, starting with Pico Formation siltstones at well DW-19, and ending with Saugus sandstones at DW-26.

In the North Canyon and the northern portion of the East Canyon, the groundwater appears to flow east to northeast, generally down and away from the axis of a broad synclinal fold. Based on these groundwater contours, the POC for the North Canyon and East Canyon extends eastward from near well DW-27 to the northeast corner of Canyon B, following the proposed landfill perimeter (Figure 5-19).

5.6.3.6 Groundwater Flow Velocity

Estimates of the rate of groundwater flow in the Saugus Formation can be calculated from Darcy's Law, expressed as:

$$V = Ki/n$$

Where:	V	=	linear groundwater velocity
	K	=	hydraulic conductivity
	i	=	hydraulic gradient
	n	=	effective porosity

As discussed above, the range for in situ hydraulic conductivity values in the Saugus Formation is $1.1x10^{-3}$ to $1.1x10^{-5}$ cm/sec. The hydraulic gradient measures the change of hydraulic head (feet) per unit length (feet), measured parallel to flow. Based on the groundwater elevations in October 2011, the gradient beneath the Main Canyon and Primary Canyon areas was approximately 0.03 to 0.04, and the estimated hydraulic gradient in the East Canyon near boring E-7 was 0.11 (Figure 5-12).

Effective porosity refers to the amount of interconnected pore space available for fluid transmission, and it is different than the porosity of a material, which is the volume of voids expressed as a percentage of the total volume of material. The available porosity values from laboratory tests in the Saugus Formation are 0.25 to 0.38, and assuming that only 75 percent of the pore spaces are connected, the estimated effective porosity is 0.19 to 0.28 (EMCON, 1990a).

Because the Saugus Formation underlies most of the landfill areas, including all of the POC areas, and the Pico Formation is less permeable than the Saugus, the rate of groundwater flow through the Saugus Formation should be considered a maximum. For the Main Canyon and Primary Canyon areas, the calculated Saugus Formation flow velocity is approximately 1 to 210 feet per year using the stated range of porosity, permeability, and hydraulic gradient values noted above. At the proposed toe of the East Canyon landfill area, the calculated Saugus Formation flow velocity is approximately 4 to 659 feet per year using the same range of porosity, permeability, and hydraulic gradient values.

5.6.3.7 Separation between Groundwater and Waste

As described above, Figure 5-19 shows the maximum groundwater elevation together with the Proposed Project excavation plan and landfill limits to illustrate the future POCs and separation between groundwater and waste. The excavation plan footprint encompasses both the Main Canyon with surface drainage to the south, and the East Canyon with drainage to the southeast. The Primary Canyon and Canyon B footprints remain the same.

The Proposed Project includes changes to the currently approved landfill footprint in two areas: (1) the North Canyon and East Canyon Excavation Area northeast of and contiguous with the Main Canyon landfill, and (2) the South Main Canyon Excavation Area, which is south of and adjoining the Main Canyon landfill. The cell excavation plan illustrates the proposed grading (with red elevation contour lines) in these areas (Figure 5-19).

The waste management unit siting and design criteria (CCR, Title 27, s 20240 [c]) state:

> *"All new landfills waste piles, and surface impoundments shall be sited, designed, constructed, and operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water. Existing landfills, waste piles, and surface impoundments shall be operated to ensure that wastes will be a minimum of five feet (5 ft.) above the highest anticipated elevation of underlying ground water."*

A maximum groundwater elevation map was prepared for comparison to the Proposed Project cell excavation plan, so that a minimum of 5 feet separation would be maintained between groundwater and refuse. The maximum groundwater elevations (blue contour lines) and excavation elevations (red contour lines) are shown in Figure 5-19. The proposed cell excavation plans appear to meet the above Title 27 requirement based on the following analysis.

Since January 1986, the groundwater elevations in the canyon bottoms have been monitored at wells DW-1 (Main Canyon) and DW-3 (East Canyon), and provide 25 years of historical data at points near the downgradient edge of each of the proposed landfills (Appendix B of the Hydrogeologic Report [RTF&A, 2012b]). Local annual precipitation data show the greatest rainfall (48.15 inches at the site) during the winter season 2004 to 2005, with a long-term average of about 14.45 inches (Table 5-2). For the purpose of establishing the highest anticipated groundwater elevations beneath the proposed North/East Canyons and South Main Canyon landfill areas, it was assumed the record rainfall of 2004 to 2005 would result in the maximum (highest) groundwater elevations. At a particular groundwater monitoring point, if the record of groundwater elevations at a monitoring point extends through the 2004 to 2005 rainfall season, the highest recorded elevation was used on the maximum groundwater elevation map (Figure 5-19). If the record does not extend through the 2004 to 2005 rainfall season, but a nearby monitoring point does have the extended record, the highest elevation is adjusted based on the groundwater level difference in the nearby monitoring point. These adjusted groundwater elevations are noted in Figure 5-19, and the groundwater elevation adjustments and site historical groundwater elevation measurements for all monitoring points are summarized in the Hydrogeologic Investigation (RTF&A, 2012b). The precipitation since this evaluation was performed (2012, 2013, and 2014 water years) would not change this analysis since they were significantly below average (6.53, 3.22, and 4.34 inches, respectively).

The majority of the current monitoring wells, including all of the Saugus Formation wells located in or near the canyon bottoms, recorded the highest historical groundwater elevations during either the spring of 2005 or 2006. In wells near the bottom of the Main Canyon, the highest groundwater elevations were in spring 2005. Compared to the Main Canyon, the East Canyon wells responded more slowly to the rainfall in 2004 to 2005, with some wells (DW-3 and DW-17) showing the highest groundwater elevations in spring 2008. In piezometer PZ-4 at the eastern edge of the drainage, the most recent October 2011 measurement was the highest groundwater level recorded. In the central portion of the North/East Canyons at piezometers PZ-5 and PZ-6, the highest groundwater elevations were reached in August 2011 and March 2006, respectively. In the North Canyon, only 2010 and 2011 groundwater levels were available with the exception of well DW-19, which showed the highest groundwater level in August 2011.

Maximum groundwater elevations determined either from historical measurements or from adjustments are provided in Figure 5-19. These maximum groundwater elevations, along with water levels determined from soil borings, where appropriate, were used to produce the maximum groundwater elevation (blue) contours. Because the water levels determined from soil borings are from a single measurement, no adjustments were possible with these data, and less emphasis was placed on these for contouring.

Figure 5-19 also presents the Proposed Project cell excavation plan (red elevation contours) to illustrate the waste-groundwater separation in both the North/East Canyons and South Main Canyon landfill areas, where the elevation difference between the red and blue contour lines represents the approximate minimum waste-groundwater separation. Because the bottom of refuse will be slightly higher than the excavation elevations, depending on the approved liner system design, the waste-groundwater separation calculated from these contour lines represents a minimum.

In the North/East Canyons, the waste-groundwater separation is smallest near the northwest corner of the excavation floor along a zone of higher groundwater associated with the anticlinal fold axis. The minimum separation of 5 feet occurs above the toe of the sideslope, between piezometers PZ-5 and PZ-8, where proposed grades range from 1,165 feet msl to 1,205 feet msl, and associated groundwater elevations range from 1,160 feet msl to 1,200 feet msl. The waste-groundwater separation increases to 25 feet southeasterly along the fold trend, where the "1,100" groundwater contour intercepts the excavation contour "1,125" between wells PZ-6 and DW-26 at the east side of the landfill floor. The waste-groundwater separation within the excavation floor increases to 50 to 60 feet along the north side, and to 110 feet in the southwest corner.

In South Main Canyon, the waste-groundwater separation is least at the west side of the excavation floor, near the toe of the east-facing cut slope. Here, the approximate waste-groundwater separation is 14 feet near the center (where the proposed grade estimated at 1,014 feet msl and the groundwater elevation contour is 1,000 feet), and the separation increases to about 25 to 30 feet at the north and south ends of the cut slope. Across the excavation floor, the waste-groundwater separation ranges from 25 to 50 feet. Therefore, the proposed cell excavation plans for the North/East Canyons and South Main Canyon areas meet the CCR (Title 27, s 20240 [c]) requirement for siting and design to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater.

5.6.4 Slope Stability

The slope stability analysis associated with the Proposed Project Excavation Plan (Figure 2-4) related to construction of the landfill liner, the east and south basins, and the entrance road was performed by RTF&A and is presented in their Geotechnical Investigation reports (RTF&A, 2012c and 2014a). The results for each of these analyses are described below.

5.6.4.1 Cut Slope Stability

Twenty cut slopes are planned for development of the North and East Canyon Excavation Area; eight cut slopes are proposed for the South Main Canyon and entrance road. In both areas, the proposed landfill liner limit is approximately coincident with the downslope side of the perimeter road, shown in Figures 5-10a and 5-10b. The cut slopes are designated Cut Slope CS-1, CS-2, CS-3a, CS-3b, and CS-4 through Cut Slope CS-27, with locations shown in Figures 5-10a and 5-10b. Data specific to all of the cut slopes, including slope height, gradient, and underlying geologic conditions are summarized in Table 1 of the Geotechnical Investigation report (RTF&A, 2012c) as updated in the Additional Geotechnical Evaluation Report (RTF&A, 2014a).

Natural slopes within the site are underlain by bedrock of the Pliocene age Pico Formation and the younger Plio-Pleistocene age Saugus Formation. Collectively, these formations are composed of bedded sedimentary rock units. Claystone units are common within both formations. These claystone units are most likely responsible for the landslides within the site, including the landslide complex located in East Canyon (landslides Qls G through Qls L; Figure 5-11a).

Bedding planes are well developed within the Pico Formation and poorly to moderately well developed within the Saugus Formation. The bedding can constitute planes of weakness. Where bedding is adversely oriented or "daylighted" with respect to natural or cut slopes, potential for "block-glide" failure exists. Block-glide slides are common within both the Saugus and Pico formations.

Slope Stability Analysis

Slope stability analyses were performed by RTF&A using the program Slope/W by GEO-SLOPE International Ltd., which utilized Spencer's or Bishop's Method. Within Los Angeles County, a static factor of safety of 1.5 and a seismic factor of safety of 1.1 is required for permanent slopes. The Proposed Project excavation slopes outside of the lined landfill footprint are considered permanent slopes. Within the landfill liner limit, the temporary excavation slopes will be lined and eventually covered with refuse. For a particular lined cut slope, the local placement of refuse may continue for several years before the final landfill grade is attained. However, there will not be any structures or access by the public below these temporary slopes.

Within Los Angeles County, temporary slopes are required to meet a static factor of safety of 1.25, which was utilized by RTF&A (2012c) for the evaluation of the excavation plan for slopes that are proposed to be lined.

Los Angeles County Department of Public Works Geotechnical Materials and Engineering Division (GMED) provided feedback relative to factor of safety requirements for the proposed temporary excavation slopes that have the potential to exist for an extended period of time (Wan, 2013, personal communication). GMED indicated that a temporary factor of safety of 1.25 is acceptable for the proposed excavation slopes within the Chiquita Canyon Landfill property boundary. However, any potential failure planes that daylight off property that have the potential to exist in an unmodified condition for an extended period of time will need to meet the GMED static factor of safety requirements of 1.5 for permanent slopes. Review of the numerous proposed cut slopes indicate that only proposed Cut Slope CS-7 (Geotechnical Section S5-S5') has the potential to exist unmodified for an extended period of time and has a failure plane that extends off-site that will have a factor of safety of less than 1.5. Additional slope configurations and stability calculations for Cut Slope CS-7 were performed to address this issue and the results are summarized below, and presented in detail in the Additional Geotechnical Evaluation report (RTF&A, 2014a).

Shear Strength Parameters

The recommended shear strength parameters are based on the results of the direct shear test results, presented in Appendix B of the Geotechnical Investigation report (RTF&A, 2012c), performed on representative samples of the earth materials encountered within the exploratory borings. In addition, shear strength parameters were also reviewed and presented in the referenced reports for the subject site and nearby vicinity. The plots of peak, single-shear residual (SSR), and multi-shear residual (MSR), as appropriate, are presented on the direct shear test summaries in Appendix B of the Geotechnical Investigation report (RTF&A, 2012c). Table 5-5 presents the selected bedding plane shear strengths, as well as the cross-bedding and compacted fill shear strengths recommended for slope stability evaluation at the site.

TABLE 5-5
Recommended Shear Strength Parameters
Chiquita Canyon Landfill

Material	Cohesion (psf)	Angle of Shearing Resistance (degrees)
Landslide Failure Plane (MSR)	100	10
Saugus and Pico Formations Bedding Plane (MSR)	200	18
Saugus Formation Cross Bedding (SSR)	600	36
Pico Formation Cross Bedding (SSR)	500	30
Compacted Fill (SSR)	350	30

Note:
psf =pounds per square foot

Geologic Sections and Assumed Critical Failure Surface

The slope stability analyses were based on subsurface conditions, as depicted on the geologic sections, Figures 5-11a and 5-11b. The existing topography, proposed grading scheme, and subsurface geologic structure are shown on the geologic sections. Where geologic sections traverse the proposed landfill perimeter, the lined slopes (temporary slopes within the landfill footprint) and permanent slopes (above the landfill perimeter) are also designated. For analyses, where the location of weak bedding planes is unknown or uncertain, one is assumed to be located at the critical location, typically near the toe of the slope. Although the highest measured groundwater level is indicated on the geologic sections, the analyses generally assumed a phreatic surface above the critical failure surface for bedding plane failures slope stability analysis. The results of the slope stability analyses for these sections are presented in Figure 5-20. The slope stability calculations

are presented in Appendix D of the Geotechnical Investigation report (RTF&A, 2012c) as updated in the Additional Geotechnical Evaluation report (RTF&A, 2014a).

The results of the slope stability analyses presented in the Geotechnical Investigation report are summarized in Table 5-6. All slopes analyzed were considered grossly stable.

TABLE 5-6
Summary of the Slope Stability Analyses
Chiquita Canyon Landfill

Cut Slope	General Location	Slope Height (feet)	Slope Grade	Geologic Stability
CS-1	Main Canyon	300	2:1	Bedding dipping steeper than slope gradient; grossly stable
CS-2	Main Canyon	150	2:1	Bedding dipping steeper than slope gradient; grossly stable
CS-3a	North Canyon	220	2:1	Bedding dipping parallel to or steeper than slope gradient; grossly stable
CS-3b	North Canyon	75	2:1	Bedding dipping steeper than slope gradient; grossly stable
CS-4	North Canyon	210	2:1-4:1	Bedding dipping parallel to or steeper than slope gradient; grossly stable
CS-5	North Canyon	120	2:1-3:1	Daylighted bedding; stable by analyses
CS-6	North Canyon	290	2.5:1-3:1	Daylighted bedding; stable by analyses
CS-7	North Canyon	205	2:1-3:1	Daylighted bedding; stable by analyses
CS-8	East Canyon	225	2:1	Favorable bedding; grossly stable
CS-9	East Canyon	150	2:1	Daylighted bedding; stable by analyses
CS-10	East Canyon	185	2:1	Favorable bedding; grossly stable
CS-11	East Canyon	150	2:1	Favorable bedding; grossly stable
CS-12	East Canyon	100	2:1	Favorable bedding; grossly stable
CS-13	East Canyon	50	2:1	Favorable bedding; grossly stable
CS-14	East Canyon	20	2:1	Favorable bedding; grossly stable
CS-15	East Canyon	50	2:1	Favorable bedding; grossly stable
CS-16	East Canyon	110	2:1	Favorable bedding; grossly stable
CS-17	South of Primary Canyon	160	2:1	Favorable bedding; grossly stable
CS-18	South Main Canyon	200	2:1	Daylighted bedding; stable by analyses
CS-19	East Canyon	50±	2:1	Favorable bedding; grossly stable
CS-20	South of Primary Canyon	30	2:1	Favorable bedding; grossly stable
CS-21	South of Primary Canyon	85	2:1	Favorable bedding; grossly stable
CS-22	South Main Canyon	100	2:1	Favorable bedding; grossly stable
CS-23	East Canyon	85	2:1	Favorable bedding; grossly stable

TABLE 5-6
Summary of the Slope Stability Analyses
Chiquita Canyon Landfill

Cut Slope	General Location	Slope Height (feet)	Slope Grade	Geologic Stability
CS-24	South Main Canyon	235	2.5:1	Bedding dipping steeper than slope gradient; grossly stable
CS-25	North Canyon	35	2:1	Bedding dipping steeper than slope gradient; grossly stable
CS-26	Landfill Entrance	85	2:1	Favorable bedding; grossly stable
CS-27	Landfill Entrance	75	2:1	Favorable bedding; grossly stable

Source: Summarized from Table 1 of the Geotechnical Investigation (RTF&A, 2012c)

Potential Set-Aside Area and Borrow Area Slopes

The 2014 Excavation Plan includes grading for potential improvements in the Set-Aside Area and three Potential Borrow Areas, as depicted with green elevation contours on Figures 5-10a and 5-10b. Perimeter cut slopes would be created for any grading associated with the Set-Aside Area pad, including slopes on the north and east sides of the pad, as well as a borrow area slope along the northwest side. These slopes would range from 100 feet on the north and east to approximately 125 feet for the northwest borrow area slope. The proposed pad elevation of the Set-Aside Area would be established at an elevation of approximately 1025 feet msl. Additionally, borrow area slopes would be graded along the western and northern walls of Wolcott Canyon. The maximum proposed heights for these slopes range from 100 feet to 225 feet.

The cut slopes would encounter sedimentary bedrock units of the Saugus Formation, with the underlying bedding striking northwest and dipping approximately 20 to 40 degrees towards the northeast. Based on the orientation of bedding relative to cut slopes, there is a potential for adversely dipping, or “daylighted,” bedding for the easterly-facing cut slopes along the western side of Wolcott Canyon. Potential daylighted bedding may require some type of stabilization, such as buttresses, retaining walls, or flattening of the cut slope gradient. Landslides would likely be encountered in the 160-foot-high borrow area cut slope in the southwest corner of the Set-Aside Area, and in the borrow area cut slope along the north wall of Wolcott Canyon. Both landslides would require complete removal to establish a stable slope configuration if the potential grading depicted on the 2014 Excavation Plan is implemented.

If the cut slopes do not effectively remove the landslides, additional excavation deeper than the proposed cut grades would be necessary to remove the slide debris, and the slope grades restored with engineered fill.

Once site-specific grading plans are developed for the Set-Aside Area and the Potential Borrow Area slopes, geotechnical investigations will need to be performed to refine the geotechnical mitigation measures and recommendations addressed above.

5.6.4.2 Landfill Slope Stability

Golder (2012) performed static and seismic slope stability analyses for the proposed master plan revision. The slope stability analyses addressed the following:

- Global slope stability of permanent waste slopes
- Slope stability of interim waste slopes within operational modules

For global slope stability of permanent waste slopes, a minimum factor of safety of 1.5 was used as the design criterion. Since the interim waste slopes are likely to remain for more than a year, a minimum factor of safety of 1.5 was also used as the design criterion for interim stability of operational modules.

The MCE ground motions were used in the seismic slope stability analyses of permanent landfill slopes, and a PGA having 10 percent probability of exceedance (POE) in 5 years was used in the analysis of interim waste slopes. Rigorous seismic slope stability analyses were performed to determine the potential for permanent displacement along the critical cross-sections. A permanent displacement value of 6 inches was considered as the maximum acceptable displacement, based on previous RWQCB direction.

The static and pseudo-static slope stability analyses were performed using the SLOPE/W 2007 computer program developed by GEO-SLOPE International Ltd. The seismic slope stability analyses performed include:

- A site-specific deterministic seismicity hazard analysis to estimate the MCE ground motions along faults that can impact this site. Also, a site-specific probabilistic seismic hazard analysis to estimate the PGA having a 10 percent POE in 5 years. Spectrum-compatible acceleration time histories were developed for the MCE and probabilistic ground motions.
- Pseudo-static slope stability analyses to estimate the yield acceleration for each critical cross-section, where yield acceleration is the horizontal acceleration that results in a pseudo-static factor of safety of 1.
- Site response analyses using the SHAKE91 computer program to determine the average horizontal equivalent acceleration (HEA) time history for the critical seismic trial surface associated with each cross-section.
- Newmark displacement analyses, which involved the double-integration of the average HEA in excess of the yield acceleration, to estimate the likely magnitude of permanent displacement.

The following is a summary of Golder's analyses and findings (2012):

Permanent Waste Slopes

The global slope stability of the permanent waste slopes was analyzed using the following assumptions regarding the shear strength of the liner systems to be constructed within the future waste disposal modules:

- **Base Liner System:** A double-sided textured high-density polyethylene (HDPE) geomembrane will be used within the base liner system. The base liner system will meet a minimum large-displacement shear strength envelope defined by a friction angle of 12 degrees.
- **Side Slope Liner System:** A single-sided textured HDPE geomembrane will be used within the side slope liner system, with the textured side facing the subgrade and the smooth side facing the operations soil layer. The smooth side of the geomembrane will meet a minimum large-displacement shear strength envelope defined by a friction angle of 16 degrees with the operations soil layer, and the textured side will meet a minimum large-displacement shear strength envelope defined by friction angle of 24 degrees with the subgrade. The operations soil layer is assumed to be placed incrementally during construction.

Using the above assumptions, static factor of safety was determined for each critical cross-section and found to be equal to or greater than the acceptable value of 1.5.

The seismic displacement analyses indicated that the permanent waste slopes are unlikely to experience permanent displacement during the MCE.

Interim Waste Slopes

The static slope stability analyses for interim waste slopes showed static factors of safety were equal to or greater than the minimum acceptable value of 1.5 for the proposed interim waste grading. The maximum waste elevation within Module 9 should be limited to 1,315 feet to achieve a minimum static factor of safety of 1.5. Similarly, to achieve a minimum static factor of safety of 1.5, the maximum waste elevation within Module 10 should be limited to 1,245 feet.

The seismic displacement analyses predicted permanent displacement of less than 1 inch for the design PGA corresponding to a 10 percent POE in 5 years.

5.6.5 Potential Geologic Hazards

Potential geologic hazards include, but are not limited to, primary earthquake hazards (ground shaking and ground rupture), secondary earthquake hazards from earthquake ground shaking (such as liquefaction, tsunamis, and seiches), and landslides/slope instability. Earthquakes have the potential to inflict the greatest loss of life and property damage. Consequently, the location of a site to active or potentially active faults is a key element in assessing the potential for earthquake damage.

The major cause of damage from earthquakes is generally the result of strong ground shaking from movement along a fault or fault zone. Ground shaking could occur not only immediately adjacent to the earthquake epicenter, but within areas for many miles in all directions. Damage due to actual fault displacement or ground rupture beneath a structure may also occur; however, fault ground rupture is much less common, and typically confined to areas along, or immediately adjacent to, the fault surface trace.

Landslides are common hazards in Southern California, particularly in hillside areas underlain by sedimentary rock units. Landslides can occur in terrain ranging from vertical cliffs to slopes as gentle as one or two degrees. Materials on slopes that are subject to landsliding include rock, soil, artificial fill, or combinations of these materials.

5.6.5.1 Fault Hazard

Earthquakes result from movement along faults or volcanic activity. In California, earthquakes are more commonly associated with faults or fault zones, and the Southern California region is historically seismically active. The numerous faults in California include both active and potentially active faults. In accordance with criteria established for the Alquist-Priolo Earthquake Fault Zoning program (Hart and Bryant, 1999) by CGS, a fault can be considered active if it has demonstrated movement within the Holocene epoch, or approximately the last 11,000 years. Faults that have demonstrated Quaternary movement (last 1.6 million years), but lack strong evidence of Holocene movement, are classified as potentially active. Faults that have not moved since the beginning of the Quaternary period are deemed inactive.

Site Faults: As part of the Proposed Project for landfill development, a fault study (including an extensive subsurface investigation) was performed by RTF&A (2006c) within the footprint of the future North and East Canyon Excavation Area. The purpose of this fault study was to investigate previously mapped faults in the North and East Canyon area to determine if the site meets the State Class III landfill siting criteria for ground rupture that states “landfills shall not be located on a known Holocene fault” (27 CCR, s 20260[d]) and the federal location restriction for fault areas (40 CFR, Part 258.13).

Based on the geologic fault investigation, RTF&A concluded that no mappable, through-going, continuous active or potentially active faults underlie the site, and the site is not within an Alquist-Priolo Earthquake Fault Zone, as established by CGS. The closest active (and zoned) fault to the site is the San Gabriel Fault, located approximately 3.3 miles to the east-northeast. According to the results of the fault study, there is little probability of surface rupture due to faulting occurring onsite during the design life of the project.

Active Faults: The site is located within an area potentially susceptible to severe ground shaking, due to the close proximity of several active faults, including the San Gabriel, Oak Ridge, Santa Susana, and San Cayetano Faults.

San Gabriel Fault: The nearest active fault is the San Gabriel fault, located approximately 3.3 miles east-northeast of the site. The San Gabriel Fault extends approximately 90 miles through the Transverse Ranges of Southern California. The San Gabriel Fault consists of a zone of imbricate steeply north-dipping faults. Throughout most of its extent, the fault has strong geomorphic expression, with the faults within the zone characterized by displaced geologic units, deflected drainages, strike valleys, notched ridges, subparallel faulting, fracturing, and folding (Oakeshott, 1958; Wentworth and Yerkes, 1971).

Within the Santa Clarita Valley, from Castaic Creek to the San Gabriel Mountains, the fault crosses the Castaic lowlands and the Santa Clara River, where its course is marked by a belt of braided small faults and steep dips in Pliocene and Pleistocene beds. Since most of the displacement within the fault zone took place before

deposition of these geologically young beds, the fault's trend through this area is not nearly as conspicuous as within the rocks along the southwestern margin of the ridge basin or in the basement rocks of the San Gabriel Mountains (Crowell, 1982). The location of the fault, however, is somewhat defined by the steeply dipping and folded beds of the Plio-Pleistocene Saugus Formation, and the fault is exposed in cut slopes, road cuts, and trenches.

Prior to 1979, most geologists studying the San Gabriel Fault acknowledged that late Pleistocene (approximately the past 100,000 years) activity along the fault zone was probable, but evidence for possible Holocene activity was judged to be very questionable (Kahle, 1986b). However, after completing a geologic and geomorphic investigation of the San Gabriel Fault, Weber (1979) concluded that some evidence strongly suggested Holocene activity. Subsequently, Cotton and Seward (1984) conducted exploratory trenching along segments of the fault zone in the Santa Clarita Valley. Although no surface evidence of faulting was recognized, at least two trenches revealed displacement of Holocene age alluvial deposits. Radiocarbon analyses of detrital charcoal from faulted alluvial materials in a trench excavated in Rye Canyon yielded an age of 3,500 ± 250 years before present. Alluvium dated as 1,550 ± 190 years before present was shown to be unfaulted in the same trench, establishing limits of latest movement on the Castaic-Bouquet Junction segment of the San Gabriel Fault.

Based on the findings of Weber (1979), Cotton and Seward (1984), and the recommendations of Kahle (1986b) for a CGS Fault Evaluation Report for the fault, the State Geologist established an Alquist-Priolo Earthquake Fault Zone for the San Gabriel Fault in 1987 within the Newhall Quadrangle.

Santa Susana Fault: The Santa Susana Fault, located approximately 6 miles southwest of the site, consists of a complex zone of primarily north-dipping thrust faults. The fault zone extends northeastward from the Santa Susana Mountains across San Fernando Pass, and into the San Gabriel Mountains. A short segment of the Santa Susana Fault ruptured during the 1971 San Fernando earthquake (Southern California Earthquake Data Center [SCEDC], 2010); however, the remainder of the fault zone has not demonstrated displacement since late Pleistocene time (Slosson and Barnhart, 1967).

Oak Ridge Fault: The Oak Ridge Fault is a south-dipping reverse fault that forms a ridge to the south of its trace. The fault extends for a distance of approximately 56 miles from Piru on the east to offshore, at a point about 20 miles south of Santa Barbara. The onshore segment of the Oak Ridge Fault is roughly parallel to both the Santa Clara River and SR-126. The offshore segment is associated with a definite zone of active seismicity (SCEDC, 2010). The only known Holocene surface rupture is found onshore, between the towns of Bardsdale and Fillmore (Yeats et al., 1986; Powell, 1991).

At its eastern end, the Oak Ridge Fault appears to be overthrust by the Santa Susana Fault, becoming a "blind thrust fault" (SCEDC, 2010). The fault associated with the 1994 Northridge earthquake is probably associated with the Oak Ridge Fault system. At its closest point, the Oak Ridge Fault is situated approximately 7 miles west-southwest of the site.

San Cayetano Fault: The San Cayetano Fault is an east-west trending, north-dipping thrust fault that extends approximately 28 miles from the foothills north of Piru to the southeastern edge of Ojai Valley. Weber et al. (1973) and Kahle (1985) suggest that Holocene fault activity is indicated by well-defined fault scarps and offset Holocene sediments. The San Cayetano Fault is located approximately 9.5 miles west of the site.

Other Active Faults: Other more distant, but significantly active faults include the San Fernando Fault Zone, located approximately 12 miles southeast of the site, and the San Andreas Fault Zone, located approximately 20 miles to the northeast.

Potentially Active Faults: The potentially active Holser Fault is situated approximately 1,000 feet north of the site. The Holser Fault consists of a south-dipping, sharply folded reverse fault (Winterer and Durham, 1962) that trends east-southeast from near Piru Creek to at least Castaic Junction. The Holser Fault post-dates deposition of the Pico Formation and is believed to be a "backthrust" of a subsurface thrust fault that represents the intersection of the San Cayetano and Santa Susana Faults at depth (Yeats et al., 1994). Weber (1979) states that there is no clear evidence of Holocene activity along the Holser Fault, but "plentiful evidence" that activity has

occurred in the past 100,000 years. Geolabs (2007) recently conducted a surface fault rupture hazard assessment for the Holser Fault within Parcel Map 18108, located east of CCL. Geolabs concluded that the last known movement on the Holser Fault was approximately 40,000 to 100,000 years ago. Consequently, the fault is considered potentially active.

Inactive Faults: The inactive Del Valle Fault is located approximately 1.2 miles southwest of the site. This fault trends eastward from the Los Angeles-Ventura County Line for nearly 2 miles, turning southward before crossing San Martinez Grande Canyon near its confluence with the Santa Clara River. According to Winterer and Durham (1962), the eastward-trending segment of the Del Valle Fault consists of a south-dipping reverse fault; the southward-trending segment is considered a tear (strike-slip) fault.

Blind-Thrust Faults: A growing body of geologic and seismologic data, supplemented by regional structural interpretations, suggests Pliocene to modern deformation in the Los Angeles basin is partly accommodated by developing basement-involved fold and thrust belts (Davis et al., 1989; Hauksson, 1990; Shaw and Suppe, 1996). The fold and thrust belts are expressed at the ground surface by elongate, low-lying anticlinal ridges. At the core of these anticlinal ridges are low-angle, blind-thrust faults rising off a basal detachment surface. Recognized blind-thrust faults in the Los Angeles and Ventura basins include the Elysian Park, Compton-Los Alamitos, Oak Ridge, and Northridge blind-thrust faults.

The closest known blind-thrust to the site is the Northridge blind-thrust fault. The site, however, is not underlain by any known blind-thrust fault.

5.6.5.2 Landslide Hazard

The site is mantled with numerous landslides. Most of the major landslides were previously identified by EMCON (1990a) and other geologists within the subject site boundaries. The number of landslides is, in part, due to the orientation of the geologic structure, as well as the weak materials exposed within the upper Pico Formation and lower Saugus Formation.

Several Holocene landslides (designated “Qls A” through “R”) and one Pleistocene (older) landslide (designated “Qols A”) have been identified within the Proposed Project grading limits. The landslides typically consist of translational slides that failed along a weak, unsupported bedding plane. Landslides located within the footprint of the North and East Canyon Excavation Area include Qls E through Qls R, and Qols A. Landslides located within the proposed grading limits of the South Main Canyon landfill and entrance road consist of Qls A through Qls D.

Landslide Qls G constitutes a major landslide complex within the northern portion of the site that was reactivated during the 2004 to 2005 winter storms when a record rainfall of 48.15 inches occurred at the site. In addition to the Qls G complex, numerous smaller slides have been identified adjacent to Qls G, including Qls H through Qls L.

An older, previously unidentified landslide was discovered by RTF&A during exploration for the 2006 fault study (RTF&A, 2006c). The older landslide appears to be derived primarily from bedrock of the Pico Formation, although lithologies of Saugus Formation and older alluvium are intermixed within the landslide mass. The geomorphology of the landslide suggests that no recent movement has occurred within the mass, as there are no signs of open fractures, scarps, grabens, or hummocky terrain. Geologic sections constructed through the slide indicate the landslide will likely be removed as part of development of the North and East Canyon Excavation Area (RTF&A, 2012c).

5.6.5.3 Debris Flow Hazard

Debris flows, consisting of a moving mass of heterogeneous debris lubricated by water, are generated by shallow soil slips in response to heavy rainfall. Landslides depend on deep percolation of groundwater and may not respond to the effects of heavy rainfall until long after a storm, whereas debris flows “occur during, and only during, heavy rainfall” (Campbell, 1975). According to Campbell (1975), damage from debris flows is due chiefly to inundation by, or high-velocity impact of, the debris mass. Campbell identifies three conditions for debris flow potential:

- A mantle of colluvial soil or a wedge of colluvial ravine soil
- A slope angle ranging from 27 to 56 degrees (slopes steeper than 56 degrees generally do not have a continuous mantle of colluvium and are most commonly bare bedrock)
- Soil moisture equal to or greater than the liquid limit of the colluvial soil

No existing debris flow deposits have been identified within the Proposed Project grading footprint. Within the Proposed Project footprint, the proposed grading will eliminate most of the debris flow hazard by the removal of debris flow-susceptible material (i.e., weathered bedrock, slope wash, and residual soil) and with the construction of drainage/debris basins. The potential for debris flows still exists along the perimeter of the Proposed Project development area, within the natural drainages above the proposed excavation footprint. The proposed design should allow for the cleanup or control of any debris flows that may encroach into the landfill area and perimeter maintenance road.

The potential for debris flows also exists within the natural drainages and slopes along the north side of the future entrance road, specifically where the entrance road will cross in front of three significant drainage gullies.

5.6.5.4 Expansive Soil Hazard

The site is underlain by bedrock of the Pico and Saugus formations, both of which contain potentially expansive clay-rich strata. Additional testing of expansive properties of the soils may be required if buildings and/or other structures sensitive to expansive soils are planned for the site. Additional testing should be completed during the grading plan review if deemed necessary by the project geotechnical and civil engineers.

5.6.5.5 Flooding Hazard

Review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps indicates that the site is not within a known flood zone. The nearest mapped flood zone boundary, related to Castaic Creek, is approximately 1,500 feet southeast of the site.

5.6.5.6 Liquefaction Hazard

The State of California Seismic Hazard Map for the Val Verde Quadrangle (CGS, 2002) indicates that portions of the alluvial soils at the site are within a potential liquefaction area. Liquefaction may occur when saturated, loose to medium dense, cohesionless soils are densified by ground vibrations. The densification results in increased pore water pressures if the soils are not sufficiently permeable to dissipate these pressures during, and immediately following, an earthquake. When the pore water pressure is equal to, or exceeds, the overburden pressure, liquefaction of the affected soil layers occurs. For liquefaction to occur, three conditions are required:

- Ground shaking of sufficient magnitude and duration
- Soils that are susceptible to liquefaction
- Groundwater level at or above the level of the susceptible soils during the ground shaking

For a site to be considered susceptible to liquefaction using the criteria and methodology initially developed by Seed and Idriss (1982), liquefaction of underlying soil layers must result in an observed surface effect such as sand boils, mud-spouts, surface water seepage, ground cracking, or quicksand-like conditions.

Lateral spreading can result in ground cracking, and may occur when a site is sloped or is near a free-face and there is a sufficiently continuous liquefiable layer on which the overlying soils can move laterally.

Ground settlement may occur during seismic shaking of an area. The settlement can be caused by liquefaction of loose, granular soils and by compaction of loose, but not necessarily liquefiable, soils.

As a result of the existing and proposed grading, loose alluvial soils within the proposed development area will be removed and replaced with compacted fill soils. The alluvium within the proposed development area will be mantled by certified engineered fill. The alluvial soils are underlain by bedrock materials. Accordingly, at the

completion of the grading operations, the site will be underlain by a combination of bedrock materials, dense alluvial deposits, and engineered fill.

Within the state of California mapped potential liquefaction areas, the historic high groundwater levels (RTF&A, 2012b) are below the elevation of alluvial soils that are subject to liquefaction. Since the alluvial soils that have a potential to be subject to liquefaction are not saturated when the groundwater is at its historical high level, the proposed development area is considered to have a very low potential for liquefaction. The site is also not considered to be subject to lateral spreading.

The floor of the Set-Aside Area is mantled by Holocene alluvial deposits. These materials may be susceptible to liquefaction and/or hydroconsolidation. If grading of the Set- Aside Area is performed, alluvial deposits determined to be susceptible to liquefaction or hydroconsolidation would need to be removed and replaced with engineered fill materials. Once site-specific grading plans are developed for the Set-Aside Area geotechnical investigations will need to be performed to refine the geotechnical mitigation measures and recommendations addressed above.

5.7 Potential Impacts

5.7.1 Standards of Significance

The potential impacts of the Proposed Project resulting from geologic and hydrogeologic conditions or seismic considerations are assessed in this section. Significance of the assessment of these direct and indirect impacts is evaluated according to Sections 15002(g), 15382, 15065(c), and Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*.

- A project is determined to have a significant effect on the environment if it results in a substantial adverse change in the physical conditions that exist in the area affected by the proposed project.

Pertaining to Geology and Hydrogeology, Appendix G of the *CEQA Guidelines* states that a project will normally have a significant effect if it will:

- Expose people or structures to substantial geologic hazards such as: rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides.
- Result in substantial soil erosion or loss of topsoil.
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project.
- Be located on expansive soil creating substantial risks to life or property.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

5.7.2 Proposed Project

Potential impacts of the Proposed Project related to geology, hydrogeology, and seismicity are described below with respect to the above standards of significance.

5.7.2.1 Substantial Adverse Change in Physical Conditions

There is a potential for the Proposed Project to have a significant effect on the environment due to resulting changes in the physical conditions that exist in the area. These potential effects on the environment and appropriate mitigation measures are identified below for potential geologic and hydrogeologic impacts. However, as described, below, the impacts from the Proposed Project due to these changes will be less than significant after implementation of the mitigation measures described below.

5.7.2.2 Potential Exposure to Substantial Geologic Hazards

There is a potential for the Proposed Project to expose people or structures to substantial geologic hazards such as: rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides. The significance for the Proposed Project to expose people or structures to each of these geologic hazards is described below.

Rupture of a Known Earthquake Fault: The detailed faulting study demonstrates that there are no known active or Holocene faults within the Proposed Project area (RTF&A, 2006c). Therefore, there is not a potential for the Proposed Project to expose people or structures to substantial geologic hazards from rupture of a known earthquake fault. Therefore, no mitigation measures would be required. Although mitigation is not required, all faults should be observed, surveyed, and documented during grading activities consistent with good practice.

Strong Seismic Ground Shaking: There is a potential for the Proposed Project to expose people or structures to substantial geologic hazards from strong seismic ground shaking. However, as required by RWQCB, the Proposed Project will be designed to withstand the MCE. A seismic slope stability analysis, including a determination of the expected PGA at the Unit associated with the MCE, was prepared for the Proposed Project (Golder, 2012). The analysis concluded that the Proposed Project design will withstand ground shaking associated with the MCE. The seismic slope stability analysis will be included as part of the JTD for the proposed Unit, which will be submitted to regulatory agencies for review and approval. The required design of the facility to meet or exceed the stringent seismic ground shaking regulatory construction standards will mitigate this impact to a less-than-significant level. Therefore, no mitigation measures would be required.

Seismic-Related Ground Failure and Landslides: There is a potential for seismically related ground failure and landslides for the North, East, and South Main Canyon areas. Numerous landslides, both recently active and ancient, are present within the site boundaries and indicate the potential for future failures if not properly mitigated. Ground failure and landslides can be initiated by seismic ground shaking and deep percolation of groundwater from sustained, heavy rainfall.

As described in Section 5.6.4, twenty cut slopes are planned for development of the North and East Canyon Excavation Area; eight cut slopes are proposed for the South Main Canyon and entrance road. The cut slopes are designated Cut Slope CS-1, CS-2, CS-3a, CS-3b, and CS-4 through Cut Slope CS-27, with locations shown in Figures 5-10a and 5-10b. Slope stability analyses were performed using the program Slope/W by GEO-SLOPE International Ltd., which utilized Spencer's or Bishop's Method. Within Los Angeles County, a static factor of safety of 1.5 and a seismic factor of safety of 1.1 is required for permanent slopes. The results of the slope stability analyses are summarized in Table 5-6. As summarized in Table 5-6, all of the cut slopes are grossly stable. In addition, any unsuitable material identified during excavation by a geotechnical engineer will be overexcavated and replaced with compacted earthfill. Therefore, these impacts would not be significant, and no mitigation measures would be required.

5.7.2.3 Potential for Project to Result in Substantial Soil Erosion or Loss of Topsoil

There is a potential for the Proposed Project to result in substantial soil erosion or loss of topsoil. However, erosion will be controlled during implementation of the Proposed Project as required by the following regulatory criteria, as described in Chapter 6.0, Surface Water Drainage:

- National Pollutant Discharge Elimination System (NPDES) General Permit requirements issued under SWRCB Order No. 97-03-DWQ and the associated site-specific Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Monitoring Program (SWMP)
- CCR Title 27 requirements, including Sections 20365, 20820, and 21150

The potential soil loss associated with the Proposed Project was evaluated using the Universal Soil Loss Equation (United States Department of Agriculture). The potential soil loss was estimated to be less than 2 tons per acre per year, which is the maximum annual soil loss recommended by EPA.

Therefore, these impacts would not be significant, and no mitigation measures would be required.

5.7.2.4 Potential for Project to Be Located on Geologic Unit or Soil That Is or Would Become Unstable

The potential for debris flows also exists within the natural drainages and slopes along the north side of the future entrance road, specifically where the entrance road will cross in front of three significant drainage gullies. There is a potential for debris flow along the perimeter of the development of the Proposed Project area. The proposed design should allow for the cleanup. The potential impact would be mitigated to below a level of significance by allowing for the control of any debris flow (see GH-1).

There is a potential for the Proposed Project to be located on a geologic unit or soil that is unstable or that could become unstable as a result of the Proposed Project. Geologic units or soils could become unstable as a result of ground motion. However, the Proposed Project design has taken into consideration site-specific geologic investigations performed by RTF&A (2006b, 2009b, 2012a, and 2012c) and others. Excavation slopes have been designed to avoid adverse bedding conditions. Any unsuitable material, as determined by a geotechnical engineer, present in the subgrade after excavation will be overexcavated and replaced with compacted earthfill.

As described in Section 5.6.4, twenty cut slopes are planned for development of the North and East Canyon Excavation Area; eight cut slopes are proposed for the South Main Canyon and entrance road. The cut slopes are designated Cut Slope CS-1, CS-2, CS-3a, CS-3b, and CS-4 through Cut Slope CS-27, with locations shown in Figures 5-10a and 5-10b. Slope stability analyses were performed using the program Slope/W by GEO-SLOPE International Ltd., which utilized Spencer's or Bishop's Method. Within Los Angeles County, a static factor of safety of 1.5 and a seismic factor of safety of 1.1 is required for permanent slopes. The results of the slope stability analyses are summarized in Table 5-6. As summarized in Table 5-6, all of the cut slopes are grossly stable. Therefore, these impacts would not be significant, and no mitigations measures would be required.

5.7.2.5 Potential for Project to be Located on Expansive Soil

There is a potential for buildings and/or other structures related to the Proposed Project to be located on expansive soil, creating substantial risks to life or property, because the site is underlain by bedrock of the Pico and Saugus formations, both of which contain expansive clay-rich strata, as previously discussed. This potential impact would be mitigated by performing additional testing of the expansive properties of the soils if buildings and/or other structures sensitive to expansive soils are planned for the site, as described in Mitigation Measure GH-2.

5.7.2.6 Substantially Deplete Groundwater Supplies or Interfere with Groundwater Recharge

There is a potential for the Proposed Project to incrementally deplete groundwater supplies and interfere with groundwater recharge, because the proposed liner and cover system of the Unit and erosion controls over the remaining developed areas would reduce or eliminate recharge of precipitation to the water table. In addition, there is a potential that groundwater extraction may be required for a corrective action program if a release from the Unit occurs to the environment. However, the volume of decreased recharge or potential groundwater extraction related to the Proposed Project would not be measurable compared to the recharge that occurs from precipitation over the Santa Clara River Valley East Subbasin and runoff from the surrounding Santa Clara River Valley watershed. The Proposed Project would extend the current waste footprint by approximately 143 acres, less than 0.1 percent of the area of the Santa Clara River Valley East Subbasin, which is over 200 square miles in size (Figure 5-6). In addition, stormwater runoff discharged from the site would flow into the Santa Clara River, where it could recharge the groundwater system. Therefore, these impacts would not be substantial (i.e., significant), and no mitigation measures would be required.

5.8 Mitigation Measures

Potential impacts of the Proposed Project related to geology, hydrogeology, and seismicity will be addressed by implementing the following mitigation measures.

GH-1 **Debris Flow.** Debris flow is a rapid and fluid type of downhill mass wasting, consisting of heterogeneous debris lubricated with water caused by heavy rainfall. Similar terms for debris flow are mudflow and mudslide. There is a potential for debris flow occurring at the site during heavy rains within existing drainage areas at the subject site. The proposed design shall include provisions for control and cleanup of debris flows that may encroach into the landfill cell, perimeter maintenance road, and proposed development areas. Potential mitigation measures could consist of combinations of the following mitigation measures such as elevated development areas, drainage devices, impact walls, debris basins, and avoidance. Additional debris flow evaluation and mitigation should be performed as part of future development of rough grading plans for the entrance road.

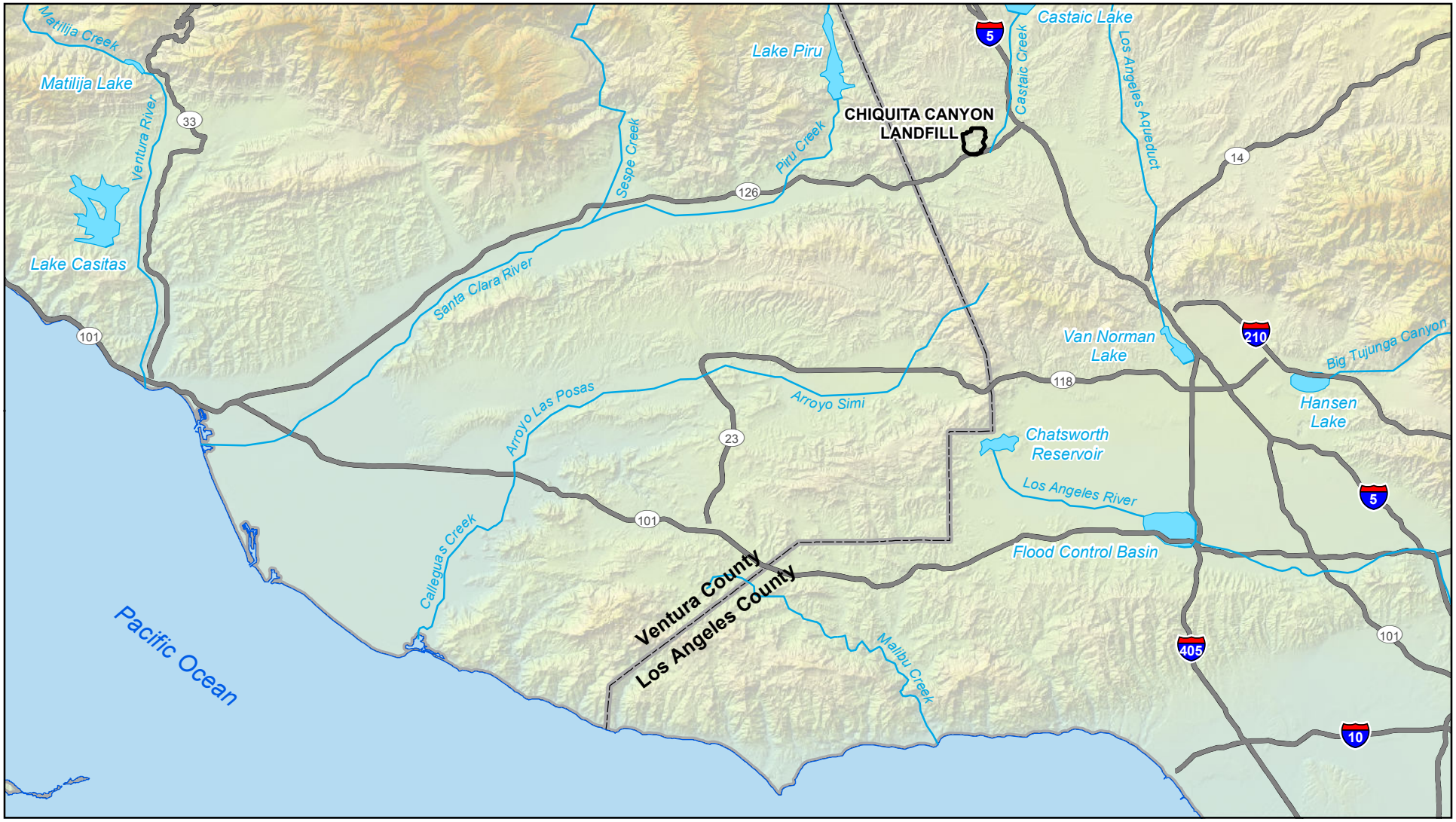
GH-2 **Expansive Soil.** There is a potential for buildings and/or other structures to be located on expansive soil, because the site is underlain by bedrock of the Pico and Saugus formations, both of which contain potentially expansive clay-rich strata. Additional testing of the expansive properties of the soils may be required if buildings and/or other structures sensitive to expansive soils are planned for the site. Additional testing should be completed during the grading plan review if deemed necessary by the project geotechnical and civil engineers.

5.9 Significance After Mitigation

Potential impacts of the Proposed Project related to geology, hydrogeology, and seismicity will be less than significant after implementation of the mitigation measures described above.

5.10 Cumulative Impacts

The potential for cumulative impacts related to geologic resources would be limited to the removal of native topsoil and the potential export of some excavated soil. Similar effects may be associated with other local development; however, most projects typically strive for soil balance in their cut and fill grading. The Proposed Project is not expected to significantly contribute to cumulative depletion of native soils. Potential impacts such as landslides and seismic hazards must be mitigated on a project-by-project basis using project design to satisfy regulatory requirements. The Proposed Project, in conjunction with other related projects, would not produce cumulatively significant effects associated with geology and hydrogeology.



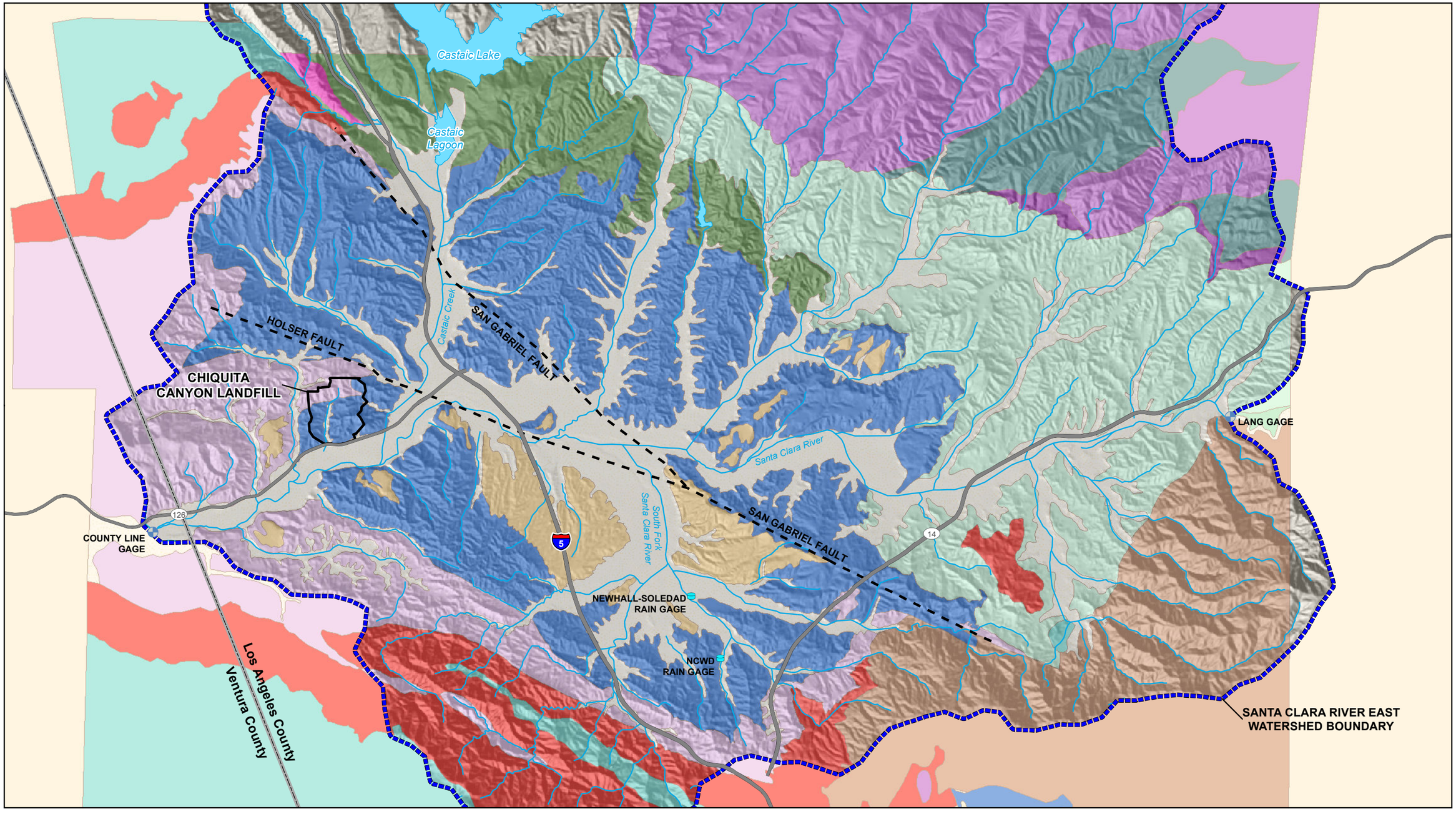
LEGEND

- Project Boundary
- Lake
- County Boundary
- Major Road
- Stream

N

0 7
Miles

Figure 5-1
Regional Topography
Chiquita Canyon Landfill
Master Plan Revision



LEGEND

- Project Boundary
- Major Road
- Stream
- Lake
- County Boundary
- Newhall Rain Gage
- Stream Gage
- Fault Line
- Watershed Boundary

Geology

- Undifferentiated Alluvium (Qal)
- Pre-Tertiary, Undifferentiated Basement Complex
- Pre-Terciary, Undifferentiated Basement Complex
- Terrace Deposits (Qt)
- Saugus Formation (QTs)
- Pico Formation (Tp)
- Towsley Formation (Tt)
- MODelo Formation (Tms)
- Castaic Formation (Tc)
- Violin Breccia (Tvb)
- Mint Canyon Formation (Tmc)
- Tick Canyon Formation (Ttc)
- Vasquez Formation (Tv)
- Undifferentiated Basement Complex (bc)

N

0 4,500 9,000
Feet

FIGURE 5-2
Regional Geologic Map
Chiquita Canyon Landfill
Master Plan Revision

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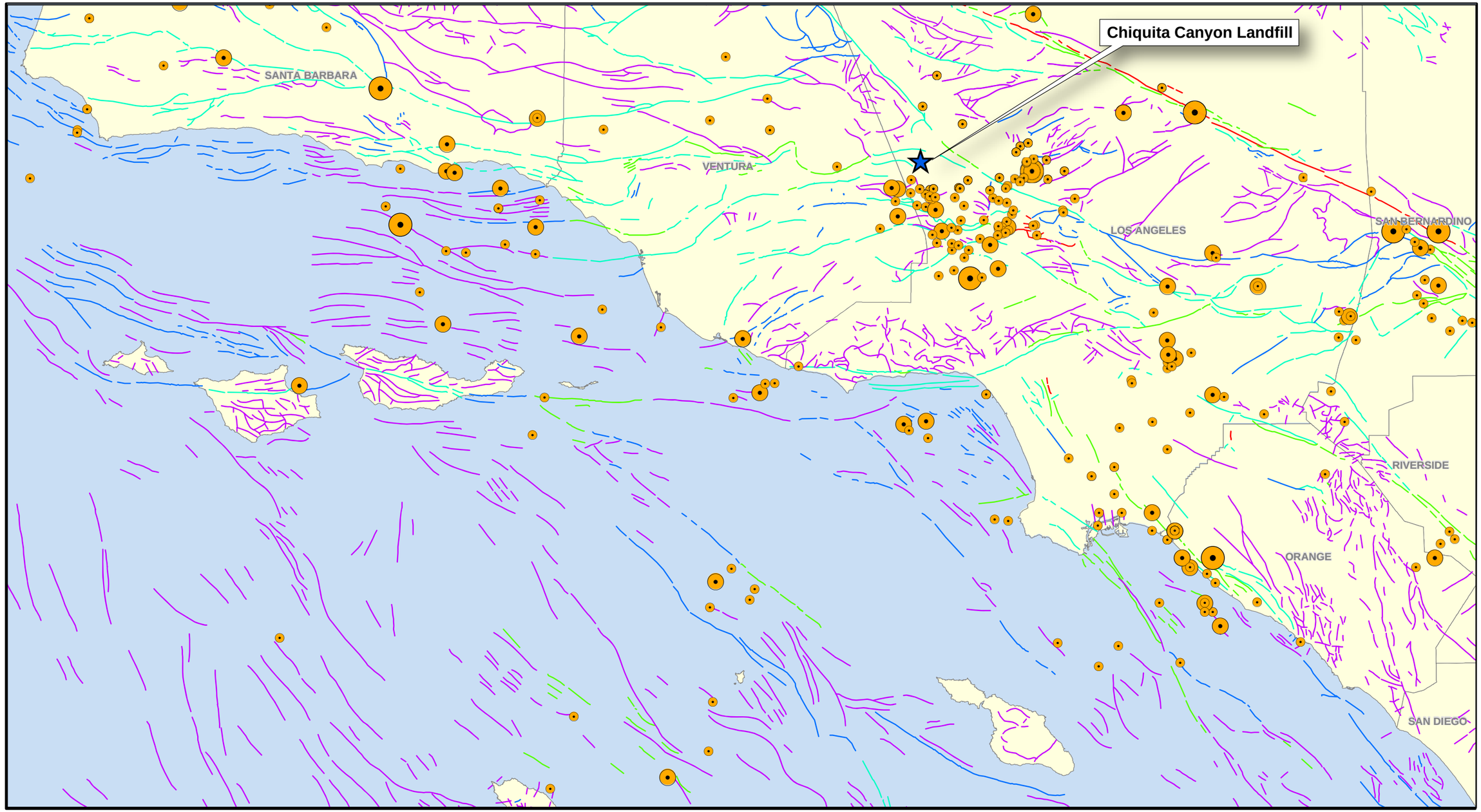
CH2MHILL



Legend

Project Location

Historical Earthquakes Greater than 4.0 Magnitude

- 4 - 5
- 5 - 6
- 6 - 7

Fault Activity Map of California: Faults by Age

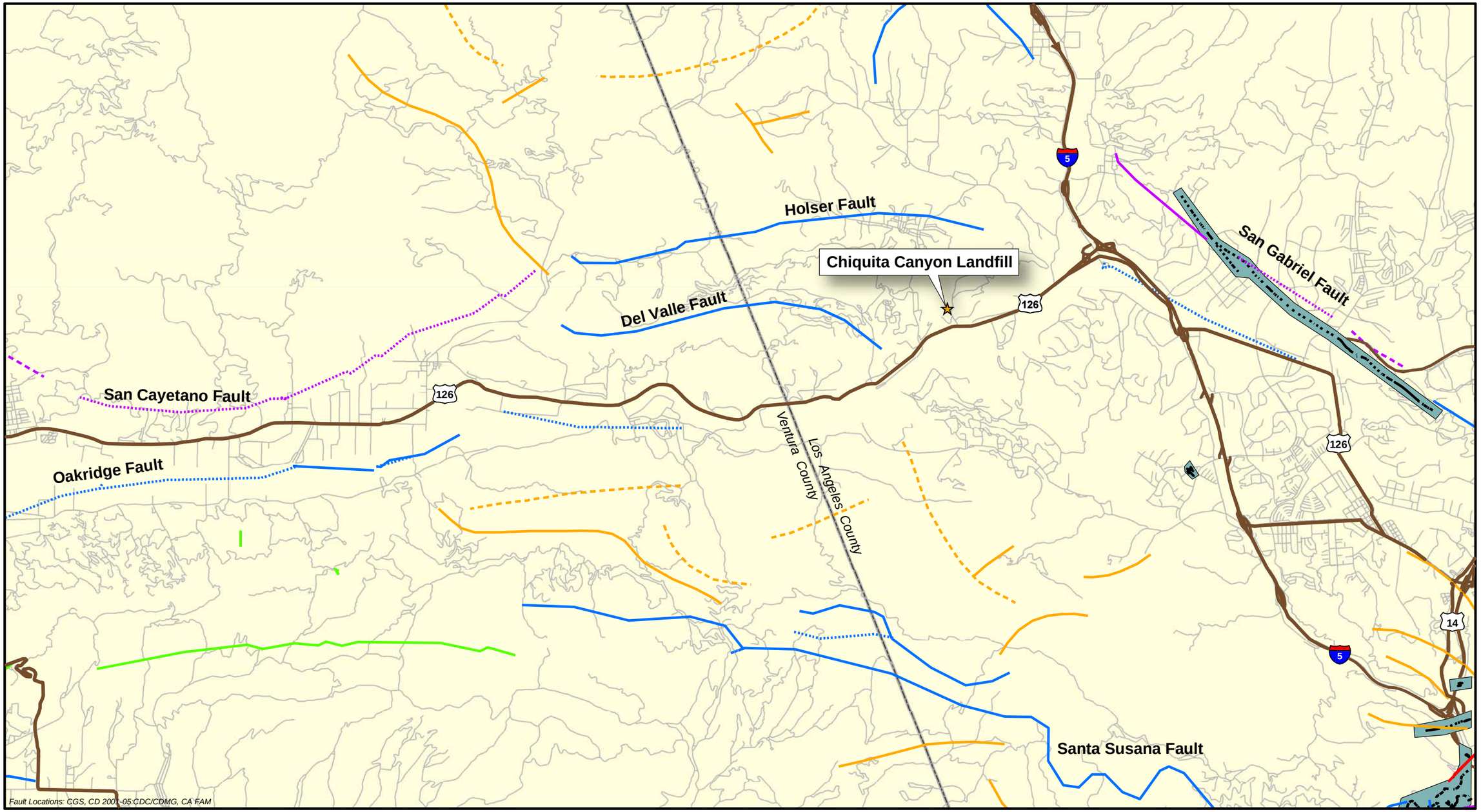
- Historic
- Holocene
- Late Quaternary
- Quaternary
- Pre-Quaternary

N

0 6 12
Miles

FIGURE 5-3
Regional Faults and Earthquake Epicenters
Chiquita Canyon Landfill
Master Plan Revision

Source: CDMG, List of Historical Earthquakes > M4; CGS, CD 2001-05.



Legend

- Project Location
- County Boundary
- Minor Road
- Major Road

Alquist-Priolo Faults and Earthquake Fault Zones (EFZ)

- Alquist-Priolo EFZ Boundary
- Fault, certain
- Fault, approximate
- Fault, inferred
- Fault, concealed

Fault Activity Map of California: Faults by Age

- Holocene
- Late Quaternary
- Pre-Quaternary
- Quaternary

N

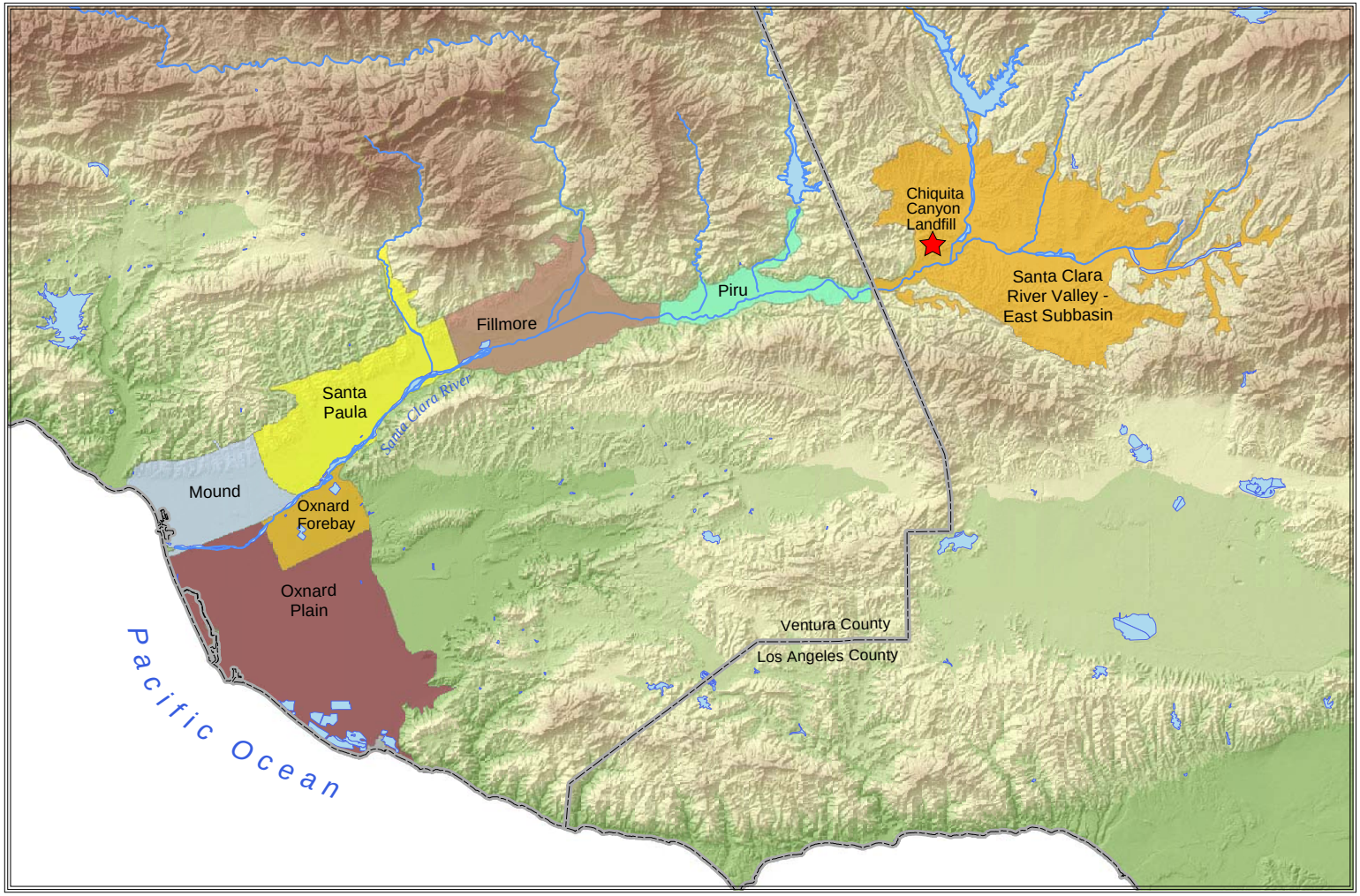
0 4,000 8,000
Feet

FIGURE 5-4
Local Faults
Chiquita Canyon Landfill
Master Plan Revision

Note: Facility and pipeline locations are approximate and are for graphical purposes only.
Source: CH2M HILL and Kennedy/Jenks Consultants, 2003.

ES092311093436SCO417064.11.05 CCL_localfaults.ai 10/11

CH2MHILL



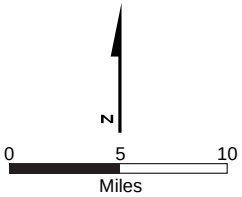
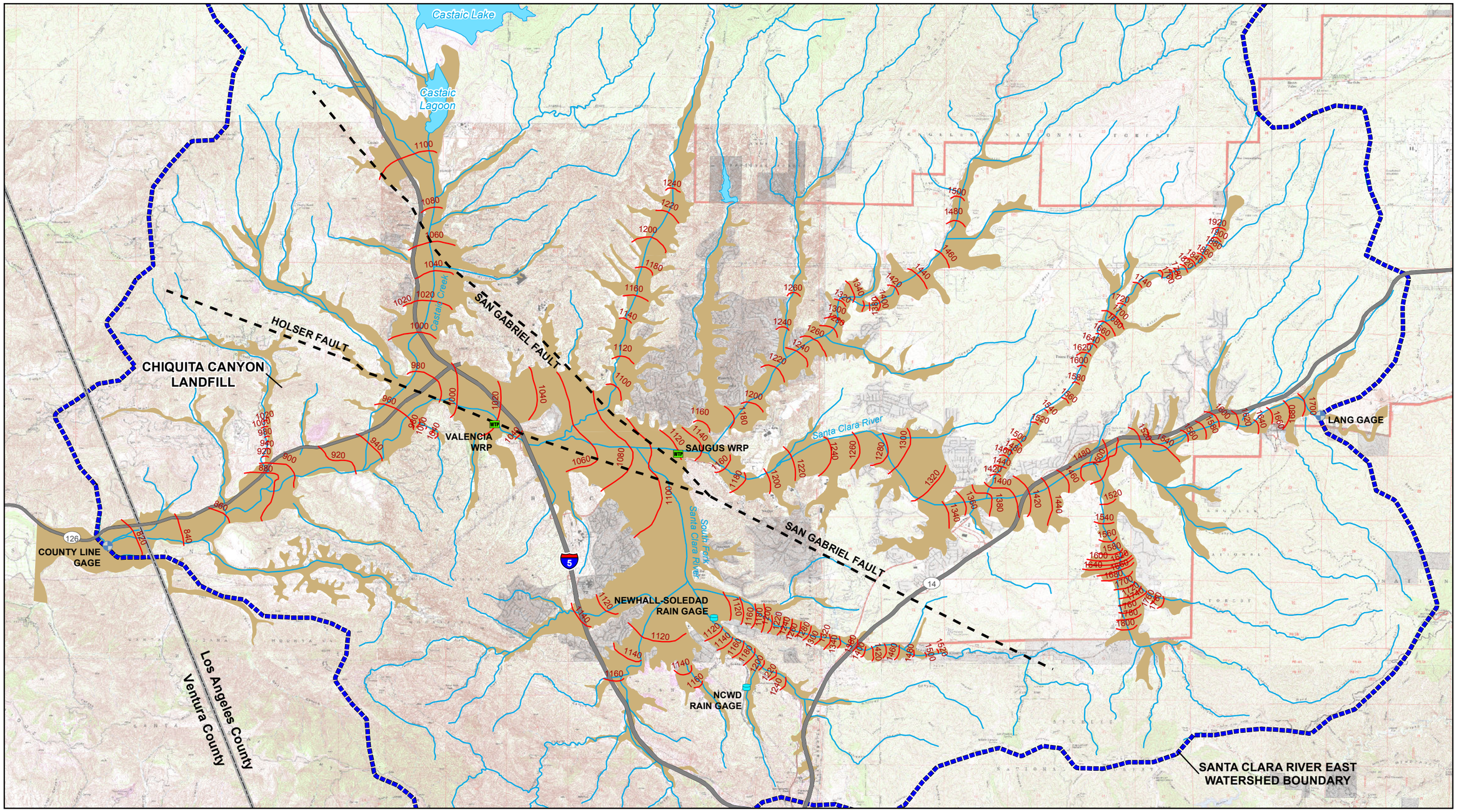


FIGURE 5-5
Groundwater Basins in the Santa Clara River Drainage
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL



LEGEND

- Project Boundary
- Extent of Alluvium
- Watershed Boundary
- Contour of Spring 2000 Groundwater Elevation (feet MSL)
- Fault Line
- Newhall Rain Gage
- Stream Gage
- Water Reclamation Facility
- Lake
- Stream

N

0 4,000 8,000
Feet

FIGURE 5-6
Groundwater Elevation Contour Map for the Alluvium Spring 2000
Chiquita Canyon Landfill Master Plan Revision

Note: Groundwater Elevation Data taken directly from Plate 4-3 of RCS 2001 update report (RCS 2002)

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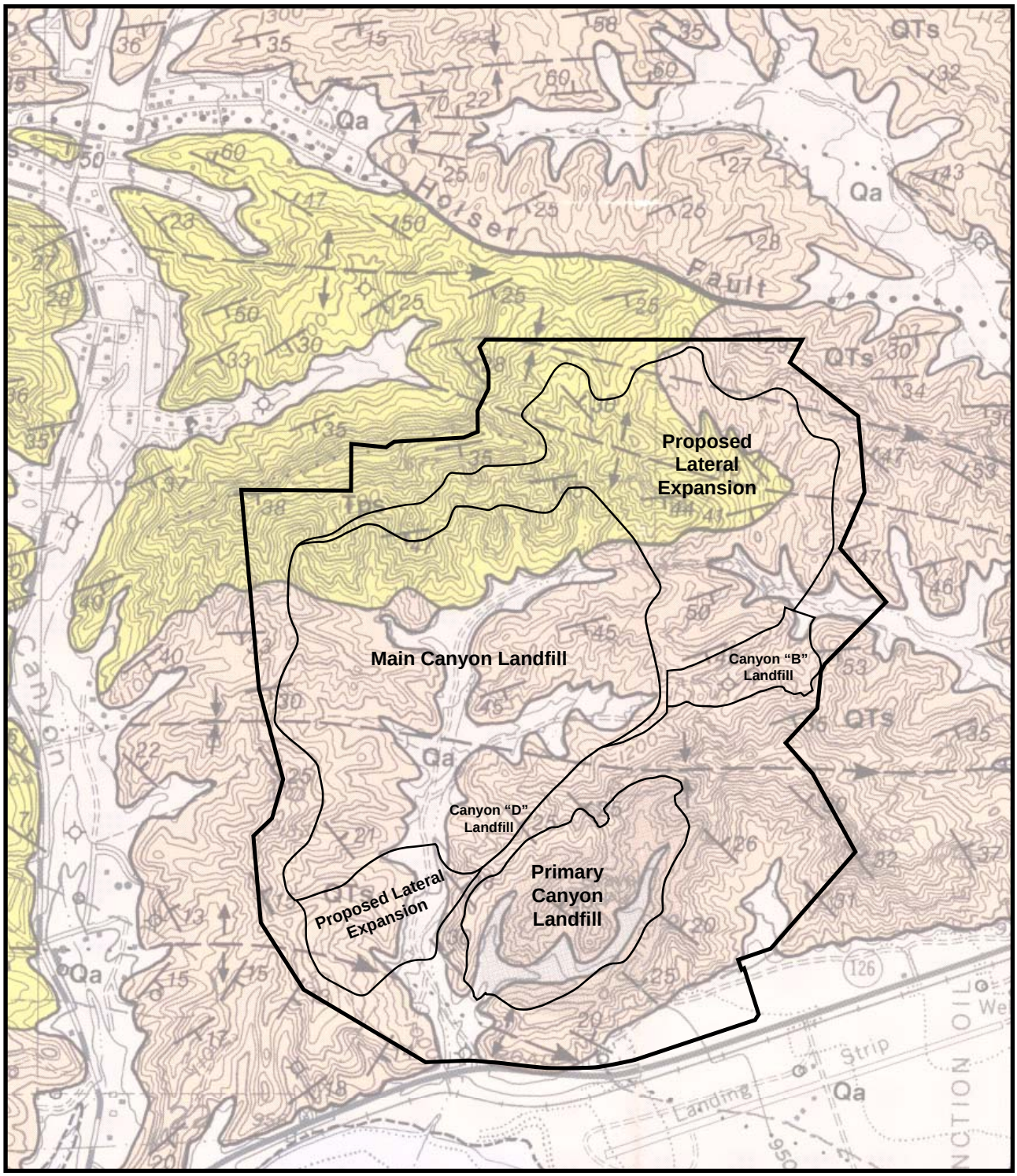
CH2MHILL



Legend:

Qa	Surficial Sediments
QTs	Saugus Formation
TPs	Pico Formation

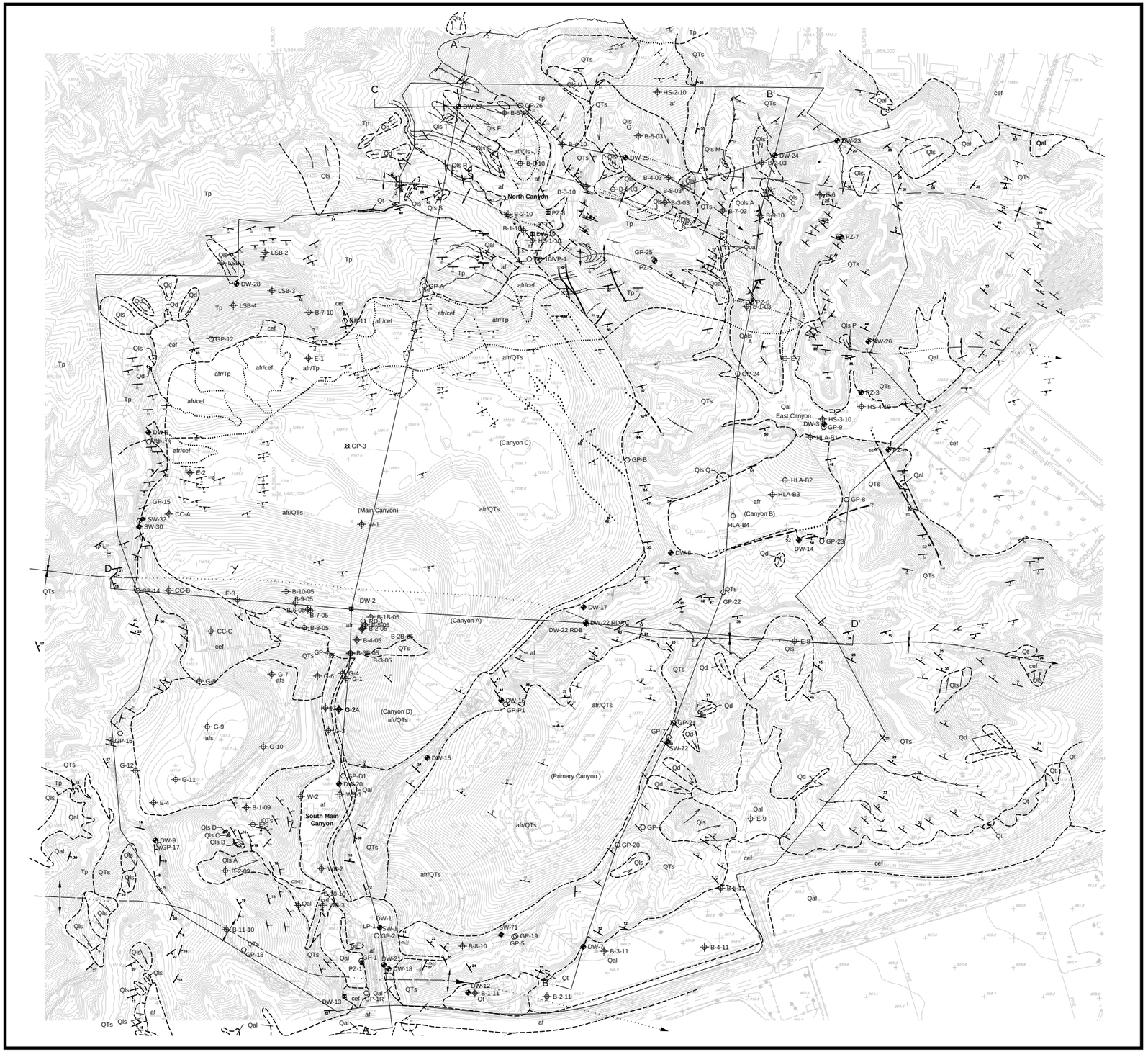
N

0 0.125 0.25
Miles

FIGURE 5-7
Local Geology
Chiquita Canyon Landfill
Master Plan Revision

Source: Dibble, 1993

CH2MHILL



EXPLANATION

- GEOLOGIC CONTACT; QUERIED WHERE UNCERTAIN OR INFERRED; DOTTED WHERE CONCEALED
- GRADATIONAL GEOLOGIC CONTACT
- ANTICLINAL FOLD; APPROXIMATELY LOCATED, QUERIED WHERE UNCERTAIN, DOTTED WHERE CONCEALED
- SYNCLINAL FOLD; APPROXIMATELY LOCATED QUERIED WHERE UNCERTAIN, DOTTED WHERE CONCEALED
- 80 — STRIKE AND DIP OF BEDDING
- 56 — STRIKE AND DIP OF CONCEALED BEDDING
- 14 — STRIKE AND DIP OF SLIDE PLANE
- 13 — STRIKE AND DIP OF JOINT
- SILTSTONE BED
- SANDSTONE BED
- FOSSIL BED
- RIDGE-FORMING COQUINA
- SURFICIAL FAILURE
- af — ARTIFICIAL FILL
- afr — ARTIFICIAL FILL, REFUSE - FILLED AND COMPACTED SOLID WASTE
- afs — ARTIFICIAL FILL STOCKPILE
- cef — CERTIFIED ENGINEERED FILL
- Qal — ALLUVIUM
- Qd — DEBRIS FLOW
- Qls — LANDSLIDE DEBRIS
- Qols — OLDER LANDSLIDE DEBRIS
- Qoa — OLDER ALLUVIUM
- Qt — TERRACE DEPOSITS
- QTs — SAUGUS FORMATION
- Tp — PICO FORMATION
- B-2-10 — EXPLORATORY BORING
- DW-24/PZ-3 — GROUNDWATER MONITORING WELL
- DW-19/PZ-8 — GROUNDWATER MONITORING WELL DESTROYED
- SW-1 — VADOSE ZONE MONITORING WELL
- GP-14 — VADOSE GAS PROBE
- LP-2 — VACUUM PRESSURE LYSIMETER
- A — A' — GEOLOGIC SECTION LINE

SCALE 1" = 200'

200' 0 200' 400' 600'

CONTOUR INTERVAL 5'

FIGURE 5-8
Geologic Map
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

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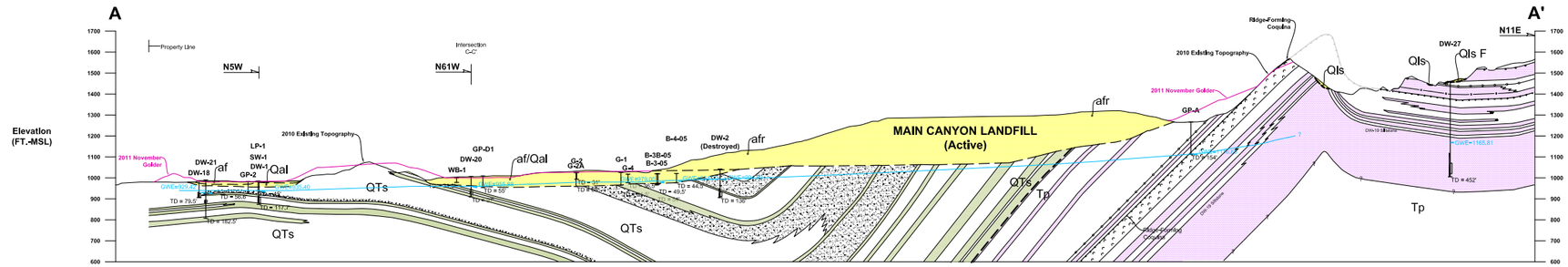
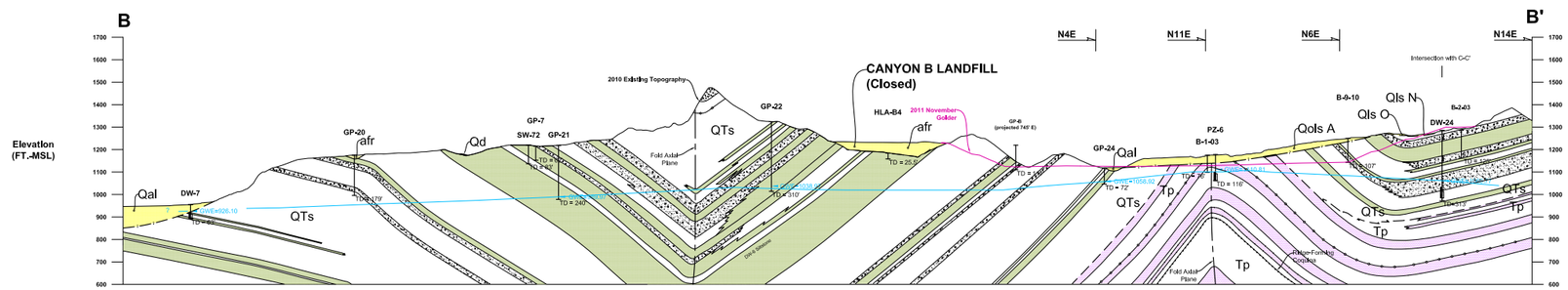
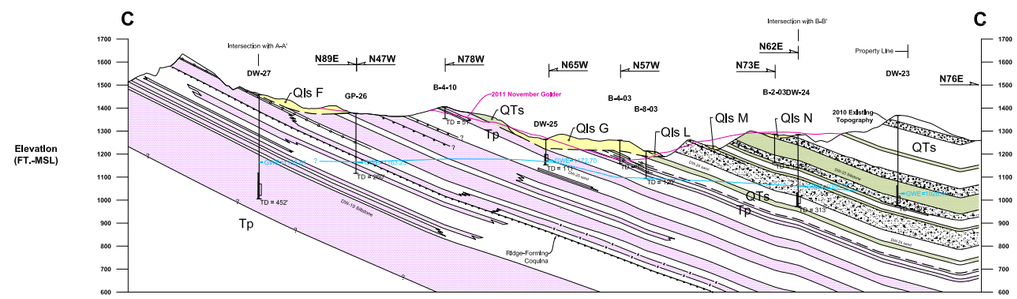
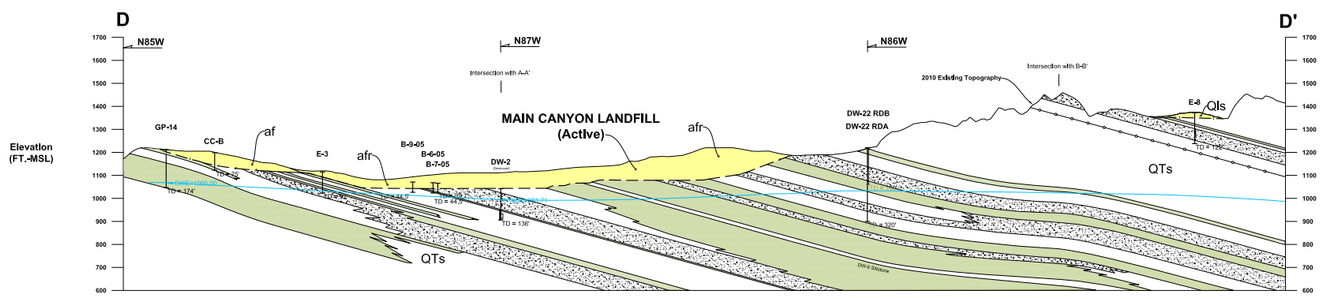
CH2MHILL









EXPLANATION

- af — Artificial Fill
- afr — Artificial Fill Refuse
- Qal — Quaternary Alluvium
- Saugus Formation Coarse-grained: sandstone with gravel
- QTs — Saugus Formation Coarse-grained: primarily sandstone
- QTs — Saugus Formation Fine-grained: primarily siltstone, mudstone or claystone
- Tp — Pico Formation Coarse-grained: primarily sandstone
- Tp — Pico Formation Fine-grained: primarily siltstone, mudstone or claystone
- Tp — Fossil rich; Primarily Sandstone
- Siltstone Bed
- Sandstone Bed
- Fossil Bed

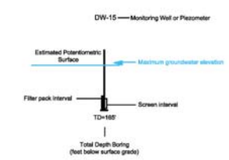


FIGURE 5-9
Geologic Sections
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

CH2MHILL

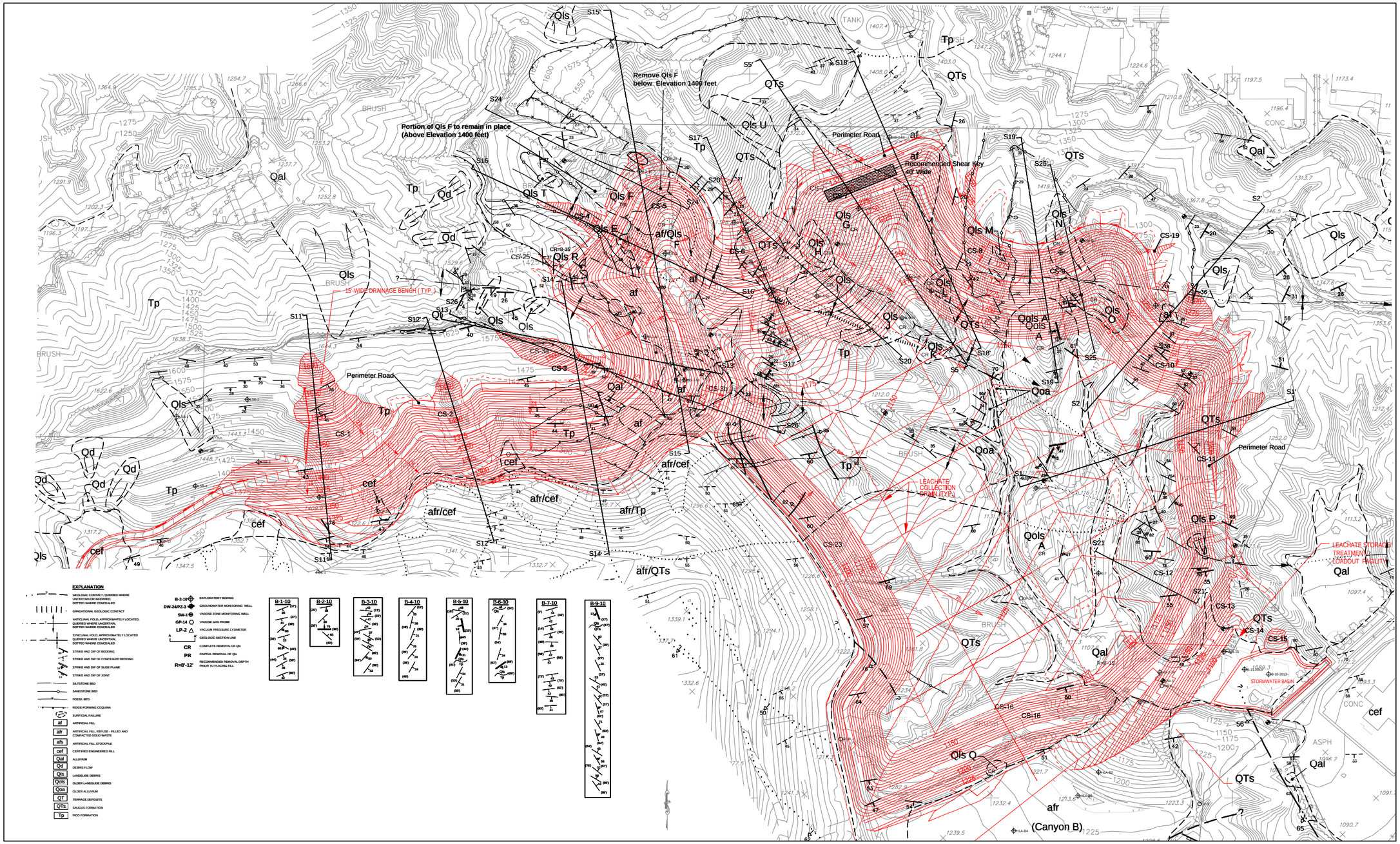


FIGURE 5-10a
Geotechnical Map
North and East Canyons
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2014.

CH2MHILL

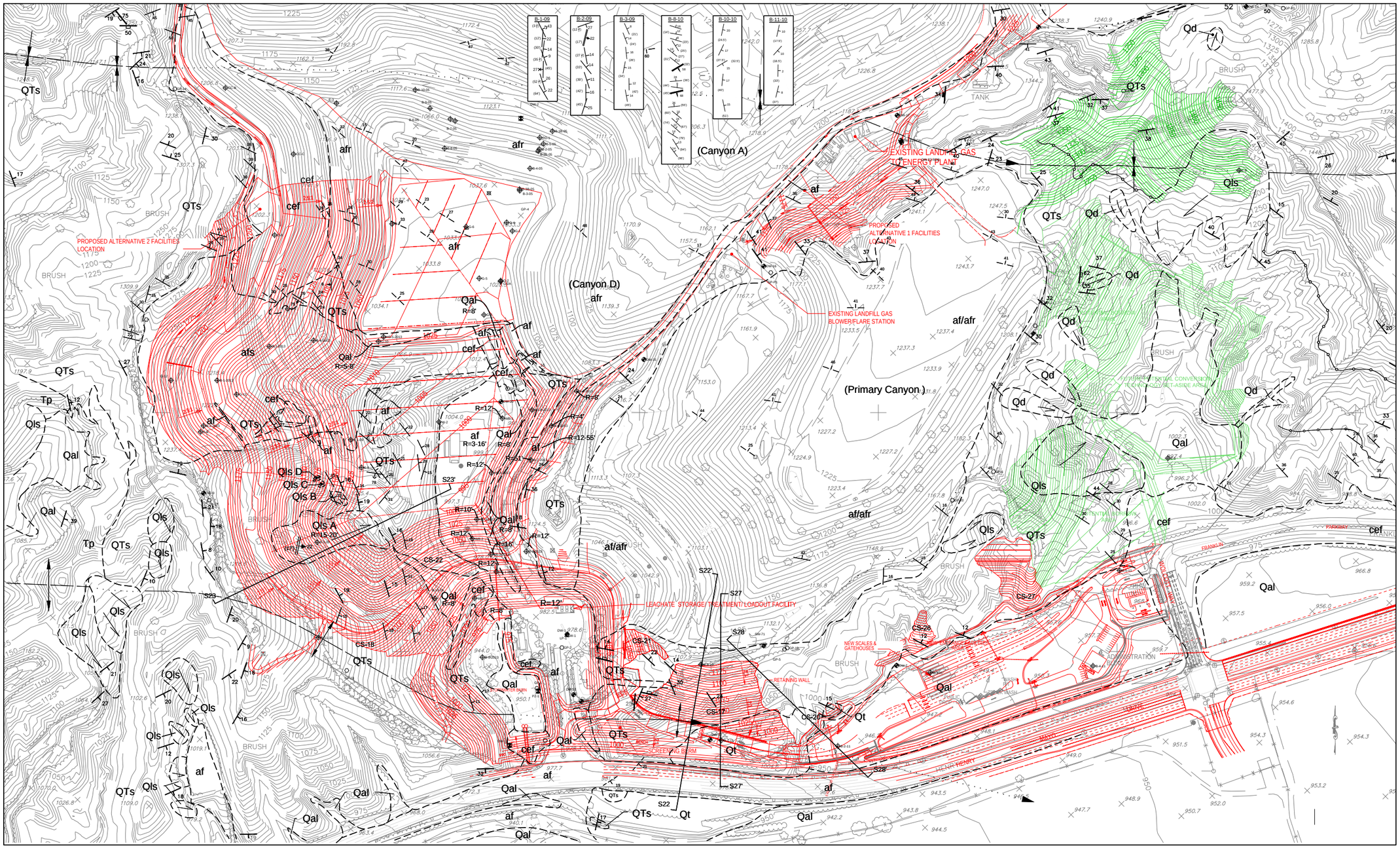


FIGURE 5-10b
Geotechnical Map
South Main Canyon and Entrance Road
Chiquita Canyon Landfill Master Plan Revision

Source: RTF&A, 2014.

SCO486708.14.06 CCL_Geotechmap_2.ai 5/14

CH2MHILL

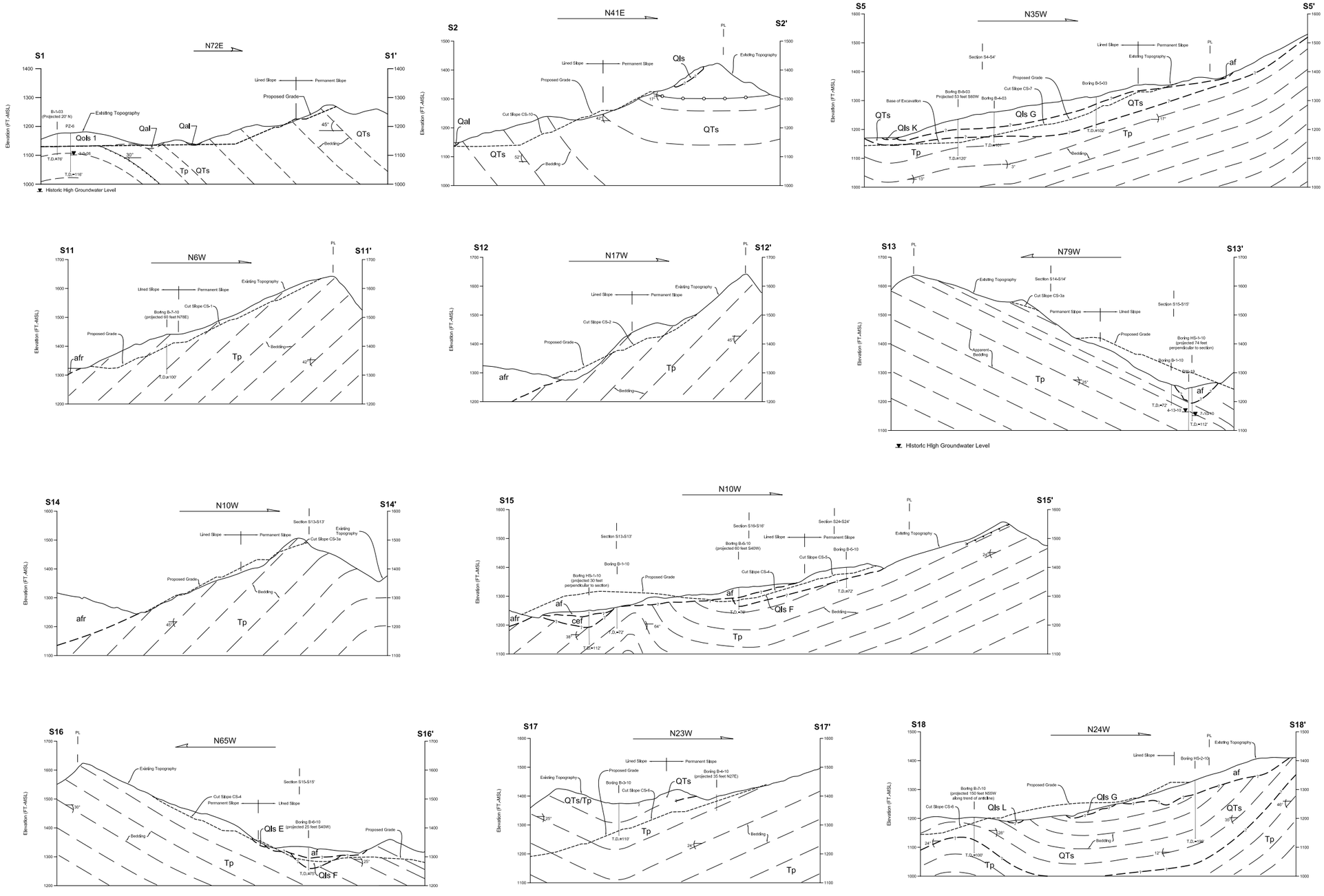


FIGURE 5-11a
Geologic Sections, North and East Canyons
S1 through S18
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

CH2MHILL

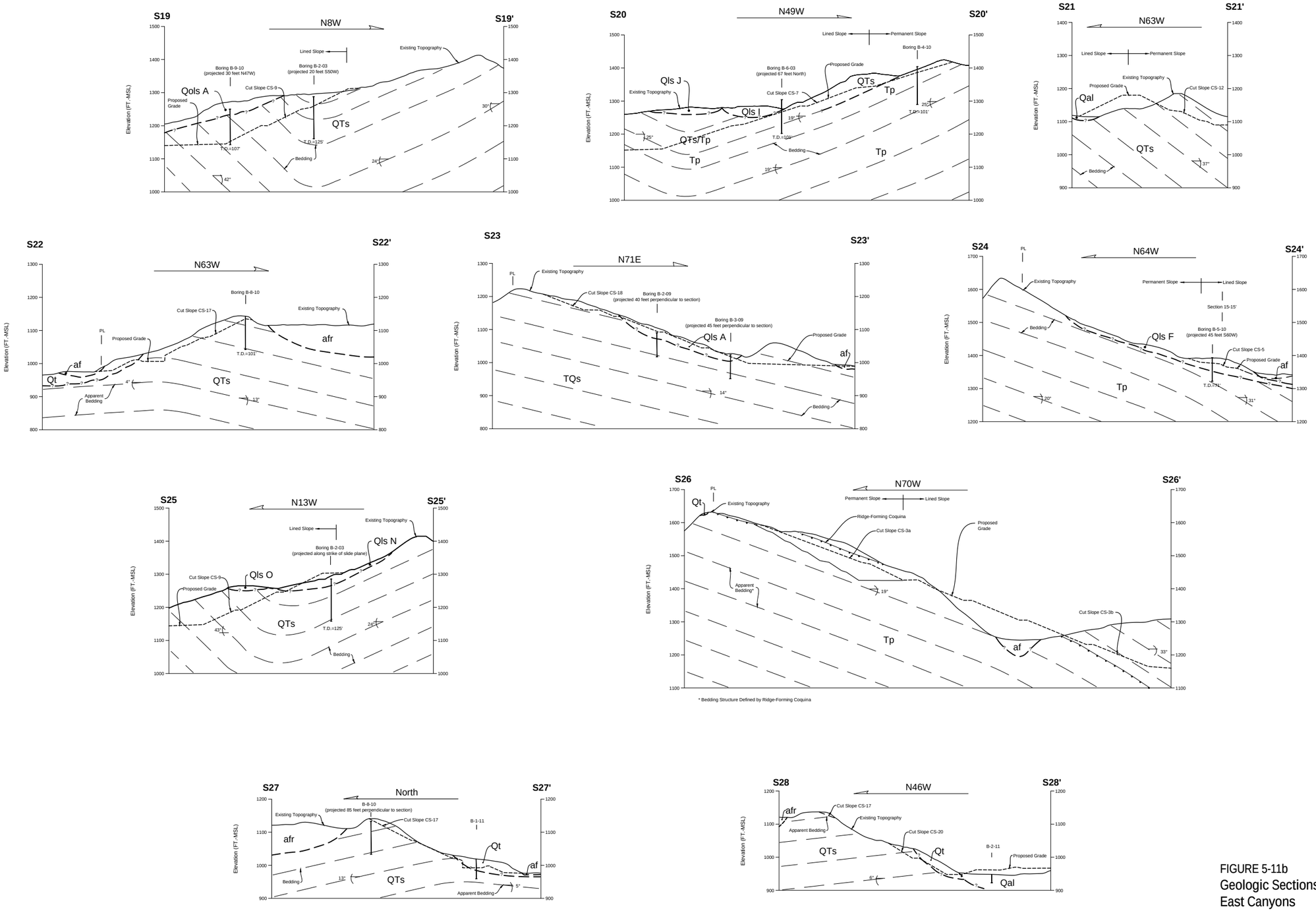
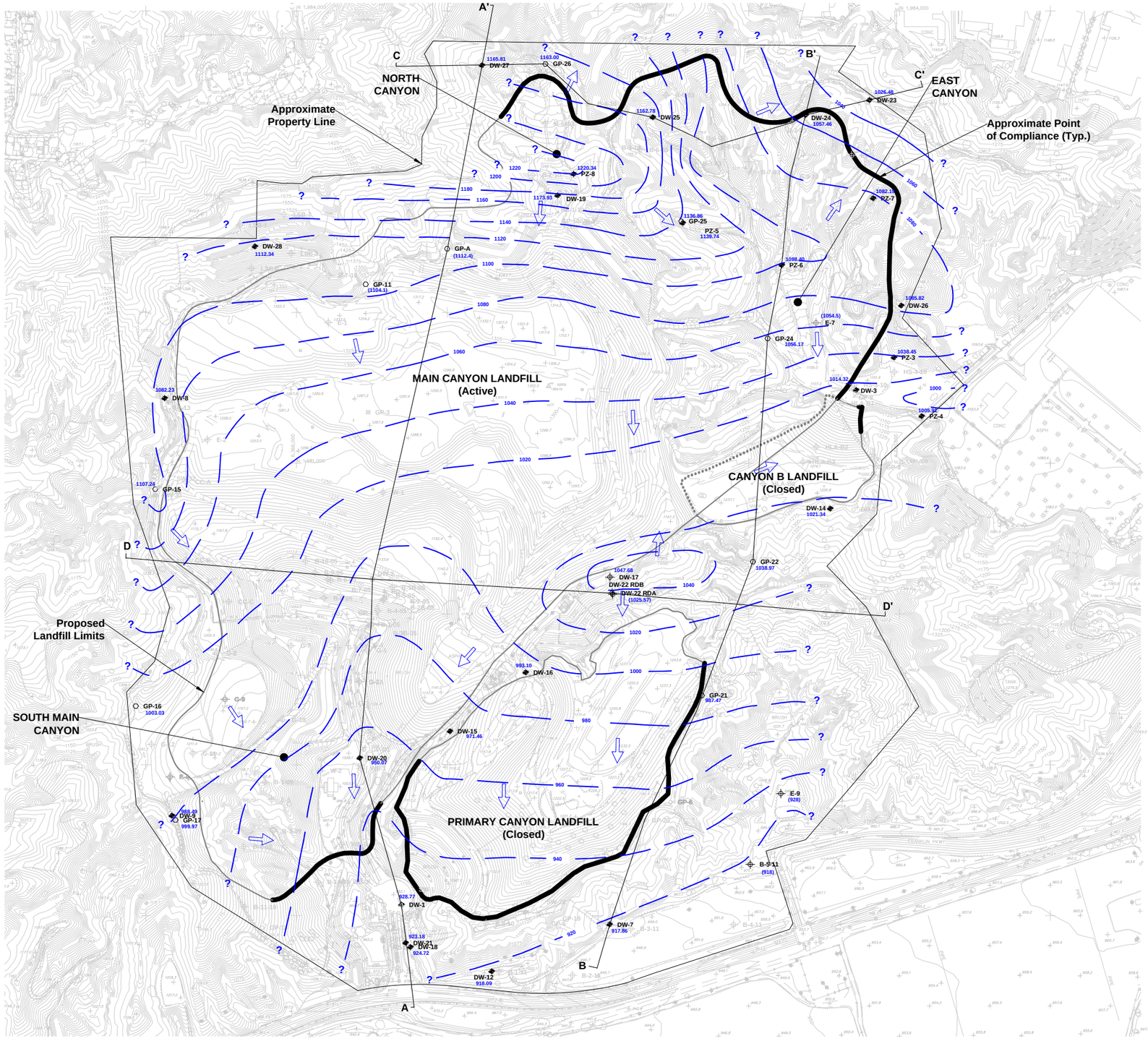


FIGURE 5-11b
Geologic Sections, North and East Canyons
S19 through S28
Chiquita Canyon Landfill Master Plan Revision

Source: RTF&A, 2012.

CH2MHILL



EXPLANATION

1040 — Groundwater Elevation Contour

1083.36 — October 17, 2011 Groundwater Elevation Measurement (Ft.-MSL)

Approximate Point of Compliance

Groundwater Flow Direction

A — A' Geologic Section Line

Groundwater Monitoring Well or Piezometer

Gas Probe

Exploratory Boring

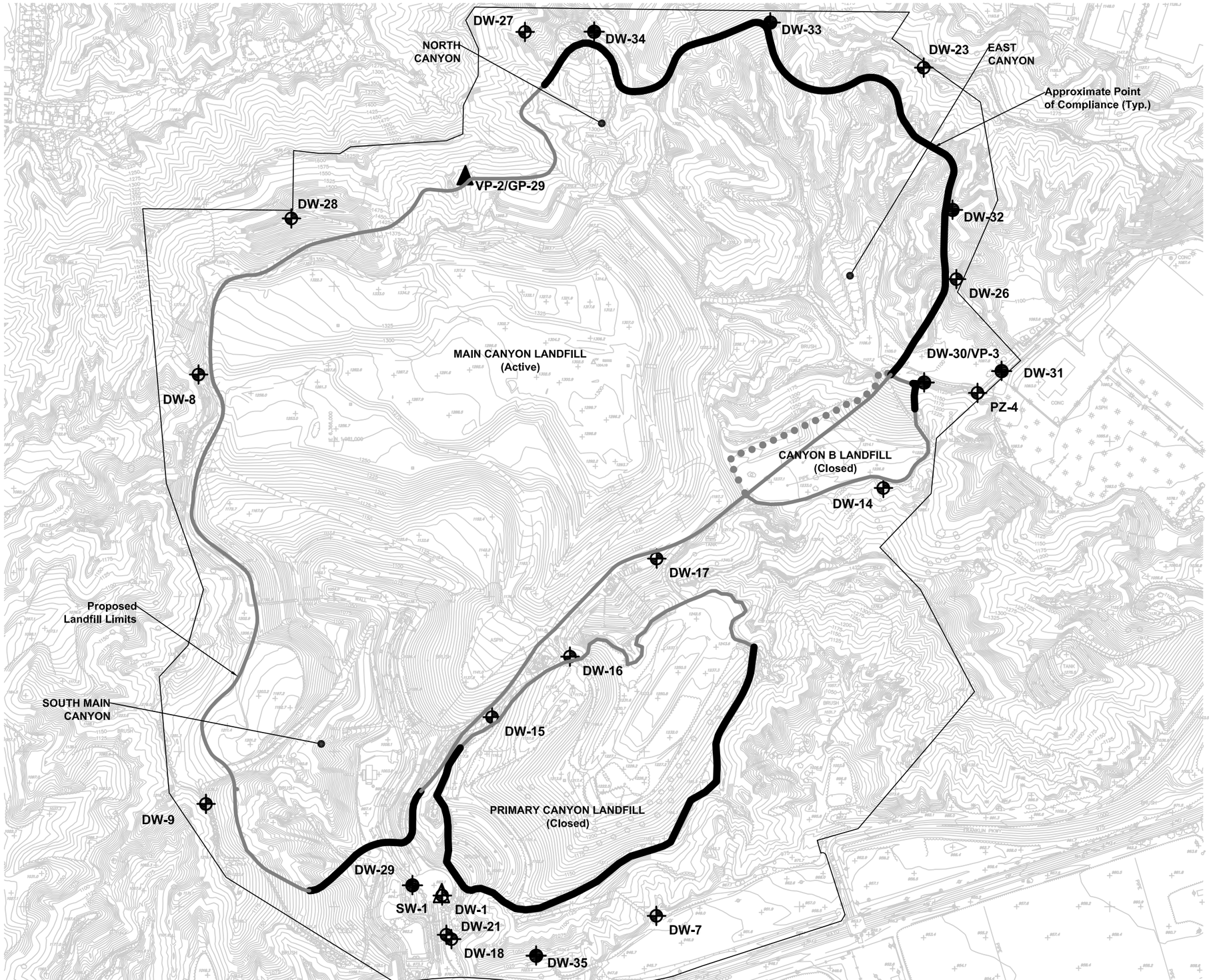
N

0 300 600
Feet

FIGURE 5-12
Groundwater Elevation Contour Map - October 2011
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

CH2MHILL



EXPLANATION

- Vadose Zone Monitoring Point (existing)
- Vadose Zone Monitoring Point (future)
- Groundwater Monitoring Point (existing)
- Groundwater Monitoring Point (future)

Note:
Proposed Landfill Limits from Golder Associates November, 2011 Excavation Plan

N

0 300 600
Feet

FIGURE 5-13
Proposed Groundwater Monitoring System
Chiquita Canyon Landfill Master Plan Revision

Source: RTF&A, 2012.

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CH2MHILL

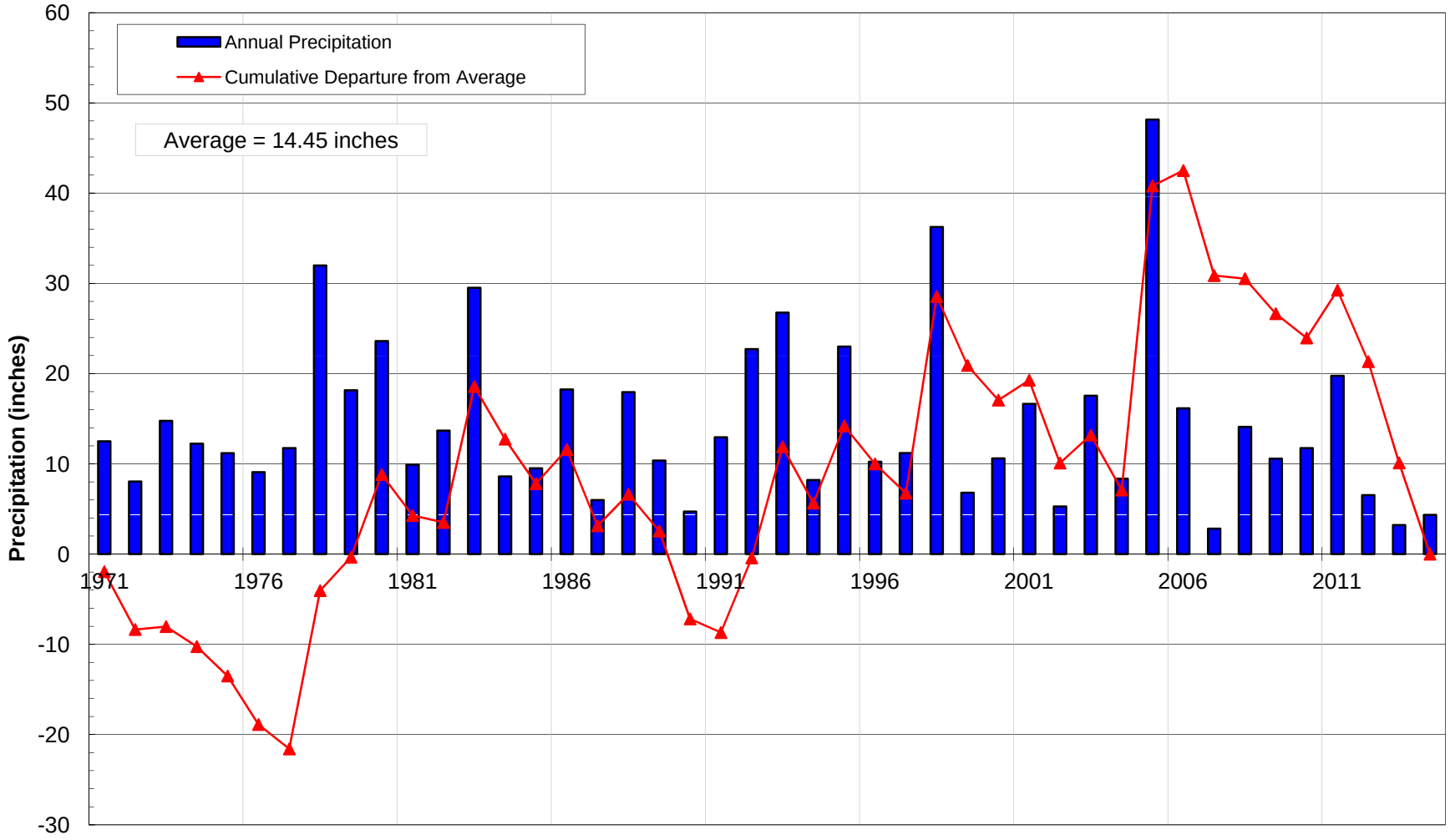


FIGURE 5-14
Annual Precipitation and
Cumulative Departure from Average
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

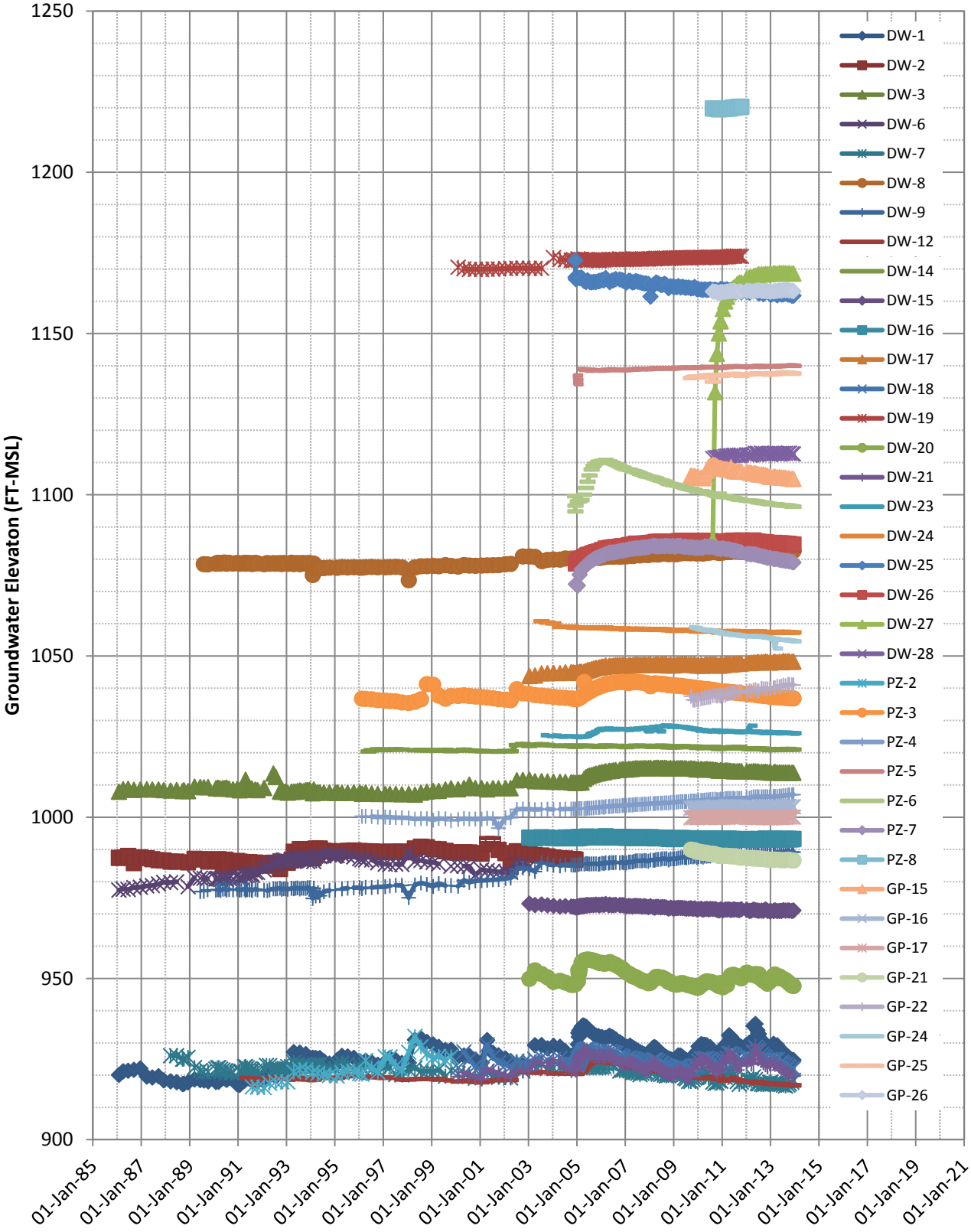


FIGURE 5-15
Site Groundwater Elevations
Chiquita Canyon Landfill
Master Plan Revision

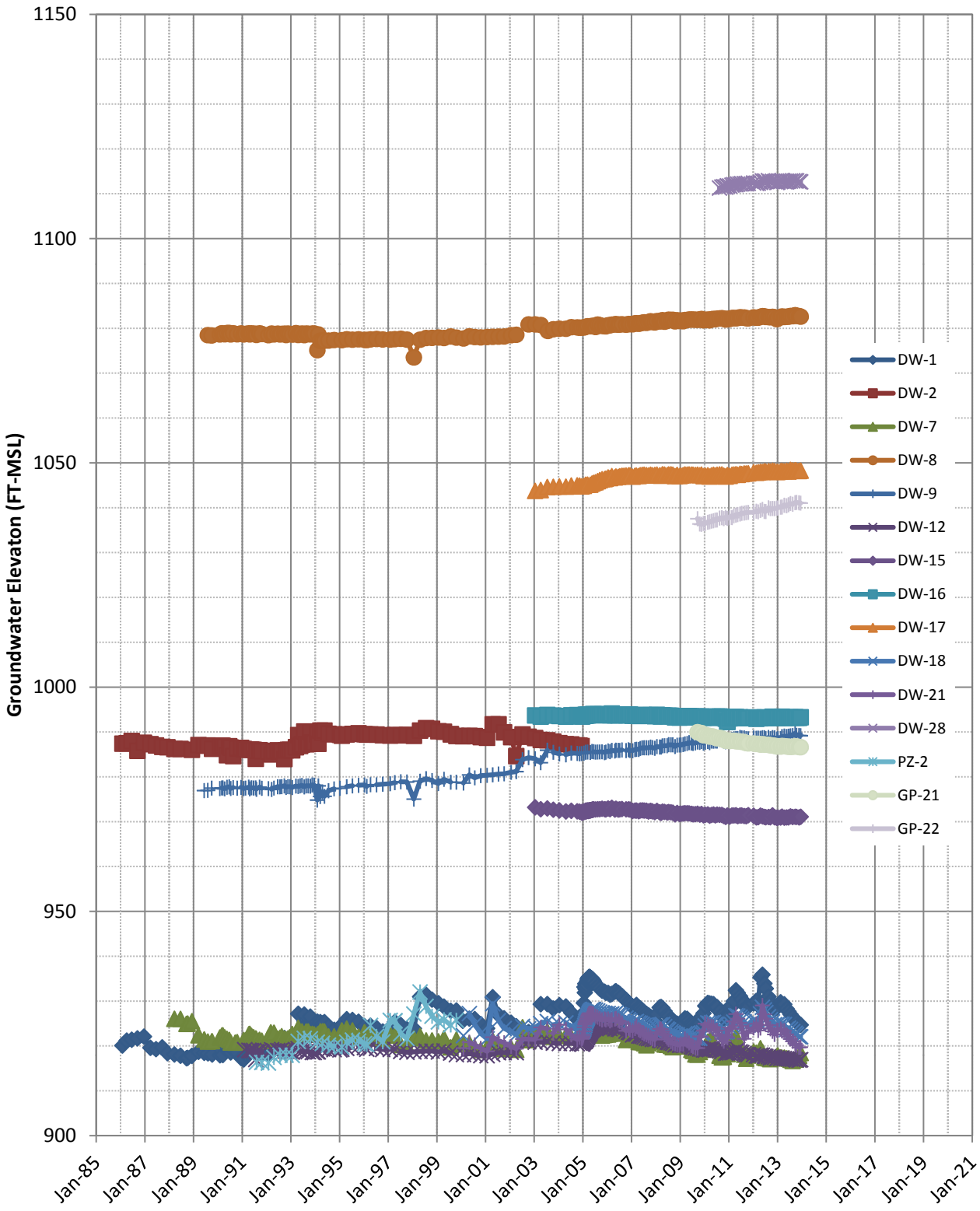


FIGURE 5-16
Primary Canyon Groundwater Elevations
Chiquita Canyon Landfill
Master Plan Revision

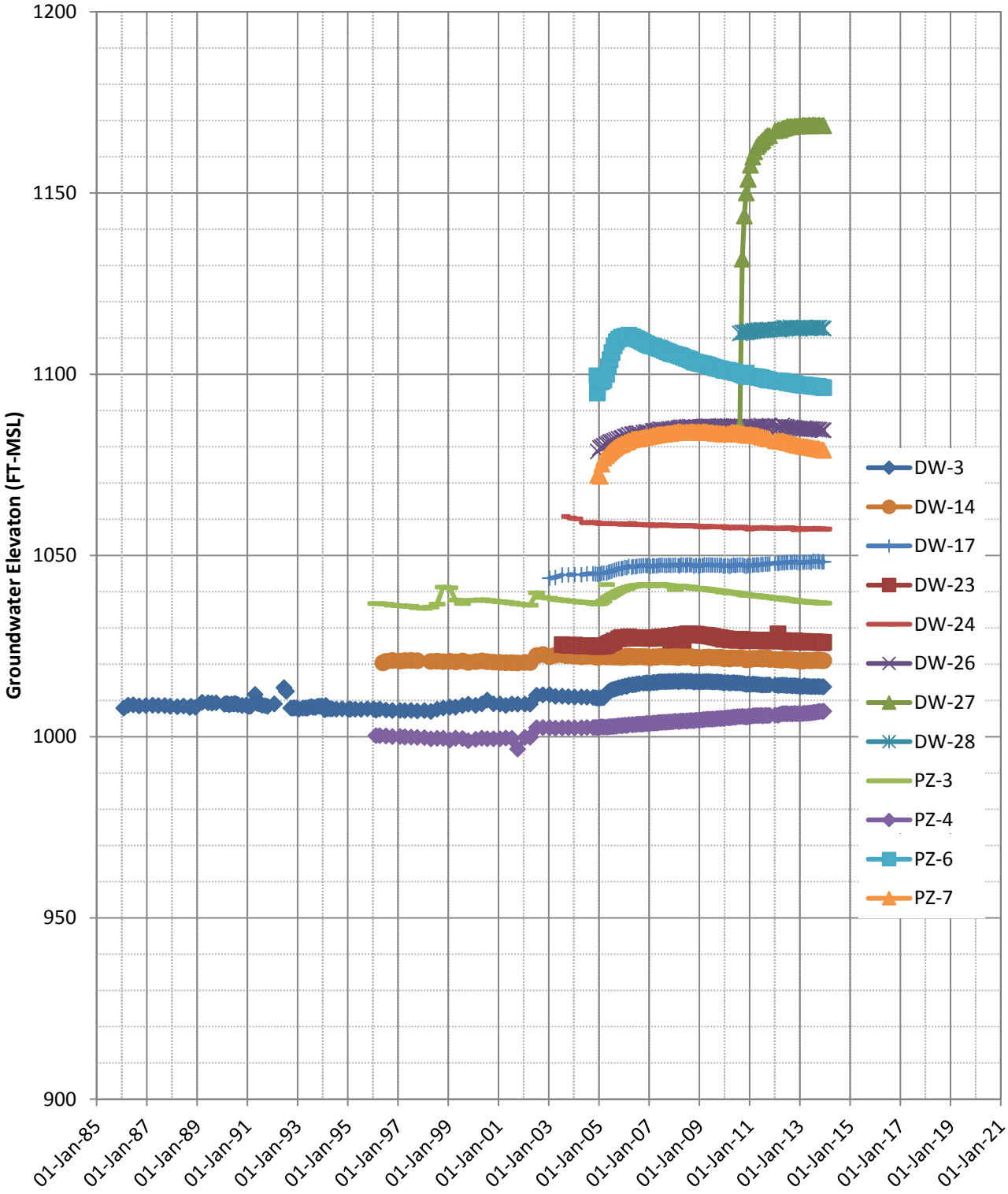


FIGURE 5-17
North and East Canyons
Groundwater Elevations
Chiquita Canyon Landfill
Master Plan Revision

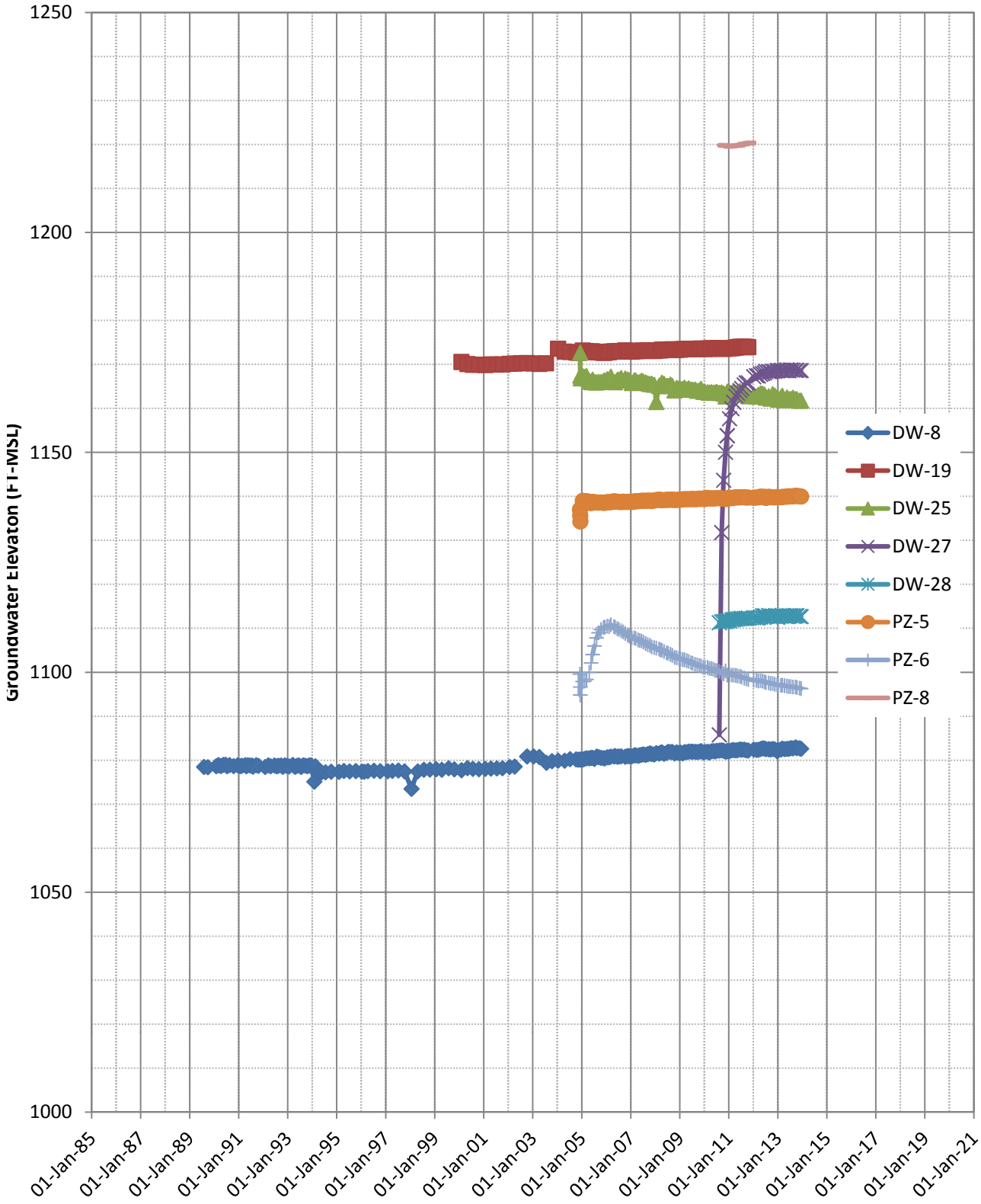
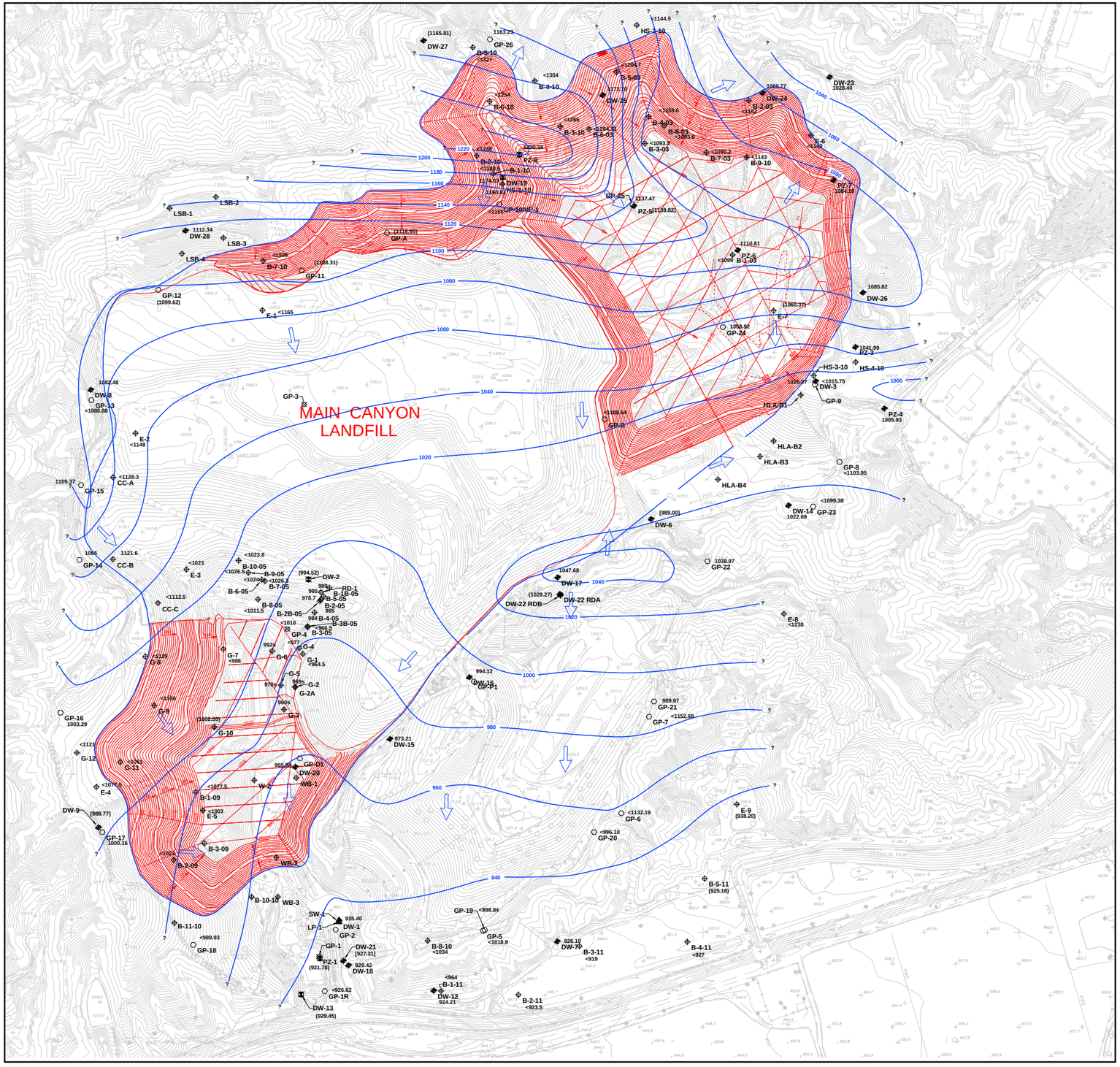


FIGURE 5-18
Pico Groundwater Elevations
Chiquita Canyon Landfill
Master Plan Revision



EXPLANATION

1040	Maximum Groundwater Elevation contour (Ft.-MSL)
	Groundwater Monitoring Points (continuous groundwater measurements)
	Groundwater Monitoring Points Destroyed
	Exploratory Borings (limited groundwater measurements)
	Gas Probe Monitoring Points (continuous groundwater measurements)
	Vadose Zone Monitoring Points (continuous groundwater measurements)
1084.19	Groundwater Elevation (Ft.-MSL); Historical Maximum
(1084.19)	Adjusted Historical Maximum Groundwater Elevation (Ft.- MSL)
<1084	Groundwater Elevation (Ft.-MSL) based on dry exploratory borings (unadjusted)
[1084.19]	Groundwater Elevation (Ft.-MSL) omitted from contouring
1084s	Groundwater Elevation (Ft.-MSL); based on seepage in exploratory borings
	Groundwater Flow Direction (from October 2010)

Proposed Project Excavation Within Landfill Footprint
From Golder, November, 2011, Excavation Plan

200' 0 200' 400' 600'
CONTOUR INTERVAL 5'

FIGURE 5-19
Maximum Groundwater Elevations and Cell Excavation Plan
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

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CH2MHILL

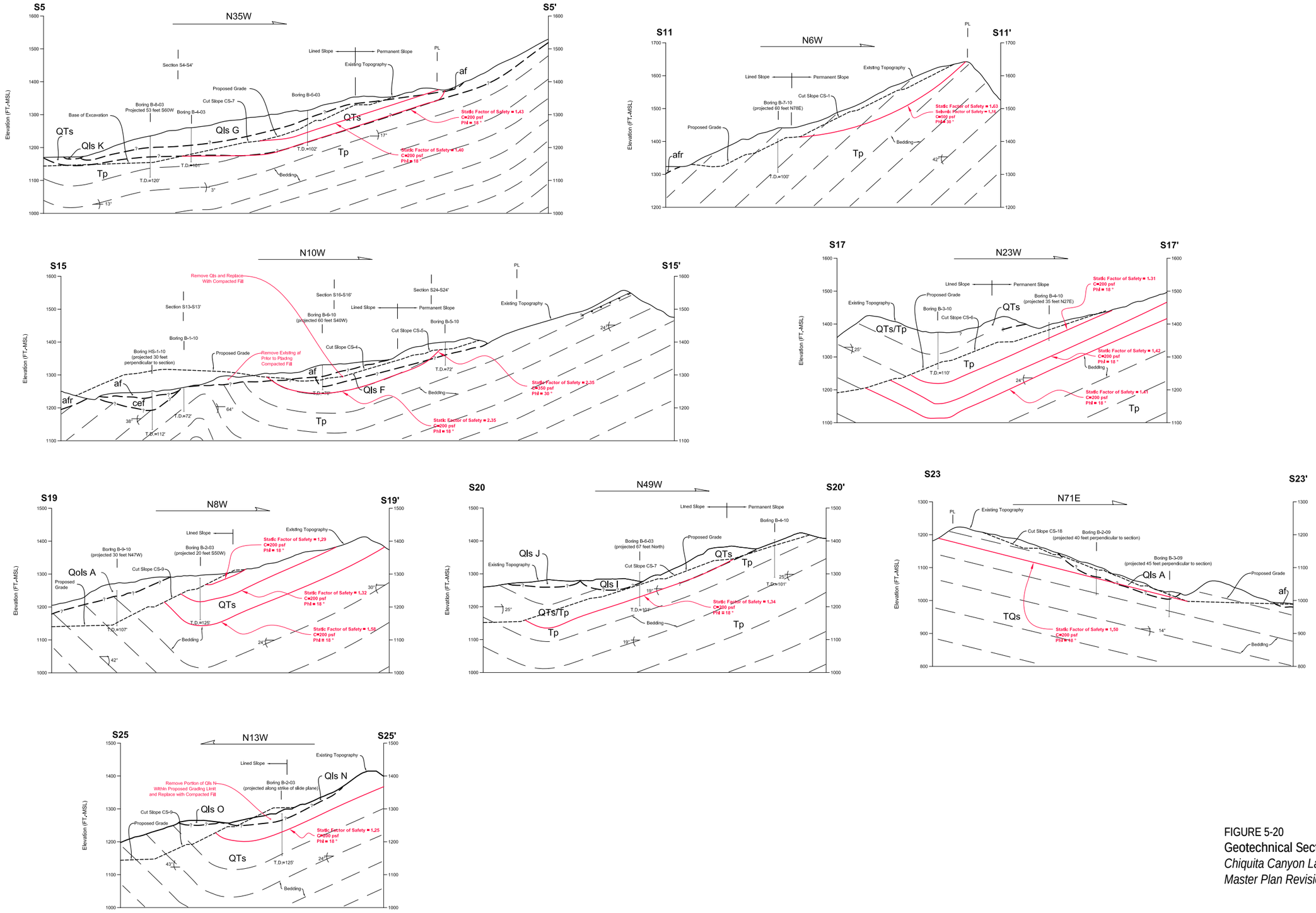


FIGURE 5-20
Geotechnical Sections
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

CH2MHILL

CHAPTER 6.0

Surface Water Drainage

6.1 Introduction

This chapter evaluates surface water drainage, including surface water runoff and sediment control, related to the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project).

6.2 Methodology

This evaluation is based on data collected as part of the Stormwater Monitoring Program (SWMP) under the CCL Stormwater Pollution Prevention Plan (SWPPP), the plans for the Proposed Project, compliance with the applicable regulations summarized below, and other applicable information.

6.3 Regulatory Setting

6.3.1 Federal Regulations and Standards

6.3.1.1 Clean Water Act

The Clean Water Act (CWA), enacted by the federal government in 1972 and subsequently amended, was designed to restore and maintain the chemical, physical, and biological integrity of the waters of the nation. The CWA requires that point source discharges of pollutants to Waters of the United States be performed in conformance with a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality. The CWA authorizes the United States Environmental Protection Agency (EPA) or states with an approved NPDES program to issue permits. California became a “delegated state” for issuing NPDES permits in 1974. The state issues NPDES permits as waste discharge requirements (WDR) in accordance with a Memorandum of Agreement (MOA) between EPA and the state board, and as codified in the California Water Code.

In response to the CWA promulgated in 1972 as subsequently amended and codified as final regulations in 1990 in Title 40 of the *Code of Federal Regulations* (CFR), Part 122 (40 CFR 122), the State Water Resources Control Board (SWRCB) elected to issue a statewide General Permit that would apply to all discharges covered under the new regulations, except municipal storm drain systems and stormwater discharges from construction activities covered under separate statewide permits. The General Permit was initially issued in November 1991 under Water Quality Order No. 91-13-DWQ.

SWRCB issued a revised General Permit under Order No. 97-03-DWQ in April 1997 to replace the existing General Permit (Order No. 91-13-DWQ). This General Permit was issued to revise some of the provisions of the expired permit in accordance with federal regulations. The revised General Permit (Order No. 97-03-DWQ) requires discharges covered under the former and revised permits to comply with the following requirements:

- Submission of an abbreviated Notice of Intent (NOI)
- Preparation of a revised SWPPP to comply with the appropriate requirements of the new General Permit
- Development and implementation of a SWMP
- Annual reporting of stormwater testing results and a comprehensive site compliance evaluation

The SWPPP has two major objectives: (1) to describe site conditions and activities to help identify sources of pollution that may affect stormwater discharge quality; and (2) to identify and implement site-specific best management practices (BMP) that mitigate pollution in stormwater discharges. Stormwater management controls include both structural and nonstructural BMPs. Structural BMPs generally consist of structural devices and improvements that are installed to complement nonstructural BMPs to control potential pollution

of stormwater discharges. Nonstructural BMPs generally consist of procedures and policies that are implemented to mitigate the potential for pollution of stormwater due to site activities.

The SWMP has four objectives: (1) to monitor the quality of stormwater discharges to ensure compliance with the General Permit; (2) to evaluate changing conditions and practices at the site to control pollutants in stormwater discharges; (3) to aid in the implementation of the SWPPP; and (4) to measure the effectiveness of the BMPs in mitigating pollutants in stormwater discharges. The General Permit requires annual sampling and testing of stormwater runoff discharge events and the subsequent reporting of results. Two annual stormwater discharge events are required to be sampled and tested.

Annual reports are required to be submitted by July 1st of each year to the Regional Water Quality Control Board (RWQCB).

6.3.2 State Regulations and Standards

6.3.2.1 Title 27, California Code of Regulations

Title 27, *California Code of Regulations* (CCR), contains the current regulations of the California Department of Resources Recycling and Recovery (CalRecycle, previously California Integrated Waste Management Board) and SWRCB pertaining to waste disposal on land. The following sections from Title 27 are relevant to surface water drainage and erosion control.

Section 20260, Class III: Landfills for Nonhazardous Solid Waste: New Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return period (Subsection [c]).

Section 20365, Precipitation and Drainage Controls: Disposal Units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under a 100-year, 24-hour design storm for Class III landfills (Subsection [a]).

Section 20820, Drainage and Erosion Control: The drainage system shall be designed and maintained to: (1) ensure integrity of roads, structures, and gas monitoring and control systems, (2) prevent safety hazards, and (3) prevent exposure to waste.

Section 21150, Drainage and Erosion Control: The drainage and erosion control system shall be designed and maintained to ensure integrity of post-closure land uses, roads, and structures; to prevent public contact with waste and leachate; to ensure integrity of gas monitoring and control systems; to prevent safety hazards; and to prevent exposure to waste (Subsection [a]). Slopes not underlain by waste shall be stabilized to prevent soil erosion. Methods used to protect slopes and erosion control shall include, but shall not be limited to, terracing, contour furrows, and trenches (Subsection [c]).

6.3.2.2 RWQCB Order No. R4-2011-0052

In 2011, RWQCB Order No. R4-2011-0052 required landfill operators to file a revised SWPPP that:

- Meets the requirements of the General Permit
- Incorporates facility-specific BMPs that limit constituents (other than water) in contaminated soils or related wastes and foreseeable breakdown byproducts from stormwater runoff
- Discusses the specific sediment and erosion control BMPs selected and implemented to address the requirements of this Order

The facility-specific BMPs include procedures for limiting the use of contaminated soils or related wastes during periods of wet weather so that the contribution of waste constituents and foreseeable breakdown byproducts to surface water runoff is limited. Erosion and sediment control BMPs shall be implemented to prevent erosion, soil loss, or mobilized waste constituents that exceed stormwater benchmark values contained in the Order.

In addition, this Order required dischargers to:

- Submit an updated list of contaminants of concern for the landfill surface water monitoring program that includes all waste constituents appropriate to the contaminated soils or related wastes.
- Implement stormwater monitoring procedures to sample all storm events (not just two as required by the General Permit) and submit samples for analysis if the storms are qualifying storm events that result in runoff at established stormwater monitoring points.

The Order defines qualifying storm events differently than the General Permit. A qualifying storm event is one that: (1) has produced a minimum of 1/4-inch of rainfall as measured by an onsite rainfall measurement device, and (2) was preceded by 2 consecutive days of dry weather. Dry weather is defined as two consecutive days of combined rainfall of less than 1/8-inch as measured by an onsite rainfall measurement device. The Order establishes stormwater benchmark values to be controlled by BMPs, or requires submittal of a plan (within 60 days of test results) to assess whether contaminated soils or related wastes are the source of stormwater pollutants. Results of this stormwater monitoring are provided to RWQCB in the semi-annual groundwater reports.

6.3.2.3 Los Angeles County Department of Public Works

In a memorandum dated March 31, 1986, the Los Angeles County Department of Public Works (LACDPW) established the policy on levels of flood protection. The policy describes what degree of flooding, and therefore which design storms, to use for certain conditions and structures. The various levels of flood protection are described below.

6.3.2.3.1 Capital Flood Protection

The Capital Flood is the runoff produced by a 50-year frequency design storm falling on a saturated watershed (soil moisture at field capacity). A 50-year frequency design storm has a 1 in 50 (1/50) probability of being equaled or exceeded in any year. Capital Flood protection also requires adding the effects of fires and erosion under certain conditions.

Facilities and structures required to meet the Capital Flood level of protection include the following.

- **Natural Watercourses –** The Capital Flood level of protection applies to facilities that are not under State of California jurisdiction, including open channels, closed conduits, bridges, dams, and debris basins. These facilities also must be constructed in, or intercept flood waters from, natural watercourses.

  A natural watercourse is a path along which water flows due to natural topographic features. For definition purposes, a natural watercourse drains a watershed greater than 100 acres. Natural watercourses have not been subject to major engineering works such as channel realignment or bank protection. The watercourse must also meet one or more of the following conditions during a Capital Flood:

  - Flow velocities greater than 5 feet per second
  - Flow depths greater than 1.5 feet

  Replacement of the natural watercourse with flood control facilities that do not provide the Capital Flood level of protection requires water surface elevation analysis. The water surface elevation must be at least 1 foot below the base of existing dwellings adjacent to the channel. The construction also must meet the requirements of the National Flood Insurance Program (NFIP).

- **Floodways –** The Capital Flood level of protection applies to all areas mapped as floodways.
- **Natural Depressions or Sumps –** The Capital Flood level of protection applies to all facilities constructed to drain natural depressions or sumps. These facilities include channels, closed conduits, retention basins, detention basins, pump stations, and highway underpasses. A depression or sump is an area from which there is no surface flow outlet. A depression or sump must meet one or more of the following conditions during a Capital Flood:

  - It has a ponded depth of 3 feet or more.

- It has a ponded water surface elevation within 1 foot below the base of adjacent dwellings resulting from construction of facilities with less than the Capital Flood capacity. This condition does not apply if ponded water can escape as surface flow before reaching the base of adjacent dwellings during the Capital Flood.

Sumps with drainage from roadways require special care. If flows reach the sump by following the roadway from upstream, the Capital Flood must be used on all areas upstream of the sump that drain to the roadway. The roadway must carry the Capital Flood capacity with a water surface elevation below the private property line. Otherwise, drainage facilities must be added beneath the roadway.

- **Culverts –** The Capital Flood level of protection applies to all culverts under major and secondary highways.
- **Tributary Areas Subject to Burning –** Canyons and mountainous areas within the County of Los Angeles are subject to burning. The Capital Flood applies to all areas likely to remain in a natural state, regardless of size. Burned canyons and mountainous areas also add debris to the runoff. Therefore, flow from "burned" areas must be “bulked.” Bulking reflects increases in runoff volumes and peak flows related to inclusion and transport of sediment and debris.

6.3.2.3.2 Urban Flood Protection

All drainage facilities in developed areas not covered under the Capital Flood protection conditions must meet the Urban Flood level of protection. The Urban Flood is runoff from a 25-year frequency design storm falling on a saturated watershed. A 25-year frequency design storm has a 1 in 25 (1/25) probability of being equaled or exceeded in any year. Street flow due to the urban flood may not exceed the private property line elevation. However, runoff can be conveyed in drains under the street and on the street surface. Urban Flood runoff is allowed to flow in the street to the point where the flow reaches the street capacity at the property line. Depth analysis is to be started at the upstream end of the watershed. The flow should be split to allow conveyance in the street and in a drain below the street when flows exceed street capacity. Drains at least must carry flow from the 10-year frequency design storm. Refer to the *Los Angeles County Highway Design Manual* and Chapter 44 of the *Land Development Division Guidelines* for road design requirements.

The street or highway must carry the balance of the 25-year frequency design storm below the property line. The drain may carry more flow to lower the water surface on the street to below the private property line or meet other requirements for vehicular or pedestrian traffic.

6.3.2.3.3 Probable Maximum Flood Protection

The Probable Maximum Flood (PMF) results from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the region. The Probable Maximum Precipitation (PMP) represents the greatest depth of rainfall theoretically possible for a given duration over a given drainage basin. The PMF occurs when the PMP falls over watersheds that have reached field capacity (saturated) conditions.

The California Division of Safety of Dams (DSOD) requires a PMF analysis for dams and debris basins that hold at least 1,000 acre-feet, are 50 feet or higher, would require at least 1,000 people to be evacuated, and have a damage potential of $25 million or more. Most dams and debris basins (earth embankment, concrete, or other materials) in the County of Los Angeles must safely pass the PMF.

National Flood Insurance Program

The NFIP set the 100-year flood as the standard for flood insurance protection. The 100-year flood relies on historical runoff records for definition. The standard makes no allowance for future urbanization or the possible inclusion of debris in the flow. In flood hazard areas, the federal standard requires the finished floor elevation of proposed dwellings to be at least 1 foot above the water surface elevation of the 100-year flood. The Base Flood Elevation (BFE) refers to the water surface elevation of the 100-year flood on the predeveloped condition. LACDPW uses the Capital Flood peak-flow rate for Los Angeles County floodway mapping standards.

The floodway is determined using the 1-foot rise criterion. Floodplain management regulations dictate that any rise in the BFE, as a result of a floodway encroachment, is unacceptable without a Conditional Letter of

Map Revision. The Federal Emergency Management Agency (FEMA) provides guidelines and standards for flood hazard mapping and requirements to meet the NFIP level of protection.

Compatibility with Existing Systems
The level of protection standards may require modification if the receiving system has limited capacity at the outlet of the proposed drain. If the receiving drain will be replaced or relieved in the future, the proposed drain must be sized for the appropriate level of protection. The proposed drain capacity is restricted to match the capacity available in the downstream drain when no future relief is planned. Solutions to situations with restricted capacities require project-specific decisions.

Existing Level of Flood Protection
Subsurface drainage often replaces surface drainage when land is developed. Replacing or modifying surface drainage systems requires maintaining or increasing the original level of flood protection. The total capacity, subsurface and surface, must equal or exceed the original surface capacity. Adequate surface drainage capacity must be retained if the proposed subsurface drain provides a lower level of protection than the original surface drainage system.

Multiple Levels of Flood Protection
There are numerous instances where a drainage system must provide more than a single level of flood protection. Drainage systems must meet the criteria described in the LACDPW Hydrology Manual.

Engineering Studies
Engineering studies to determine runoff volumes are undertaken for projects in Los Angeles County in accordance with the current methods, standards, and policies of LACDPW. In circumstances for landfill design where 100-year flood protection is required by state or federal standards, the studies include a supplemental review utilizing nationally accepted hydrology methods and meteorologic data from the National Oceanic and Atmospheric Administration. The landfill designer shall use the larger of the two results found from both studies to prove 100-year flood protection for the site.

6.4 Regional Setting

CCL is located in the Santa Clara River East Watershed as shown in Figure 6-1. The Santa Clara River headwaters originate in the San Gabriel Mountains in northern Los Angeles County and traverse Ventura County to discharge in the Pacific Ocean. The Santa Clara River receives drainage from a 1,600-square-mile area. The Santa Clara River is mostly unaltered, with 90 percent of the watershed in rugged mountains and the remaining watershed in the valley and coastal plain.

The quality of the regional surface water is variable and depends on the discharge volume (EMCON, 1990a). The surface water quality of the tributaries of the Santa Clara River is generally good, except for that west of Newhall. Those tributaries tend to degrade both groundwater and the Santa Clara River (EMCON, 1990a).

6.5 Local Setting

The Santa Clara River passes south of CCL, just south of State Route 126 (SR-126) (Figure 6-1). CCL is above the 100-year floodplain of the Santa Clara River, as identified by the FEMA Flood Map. Therefore, the potential for onsite flooding associated with the Santa Clara River is low.

6.6 Stormwater Management at CCL

Stormwater is managed at CCL in accordance with appropriate federal, state, and county regulations, including NPDES, the Los Angeles County Low Impact Development Ordinance, and Title 27 requirements. Stormwater is managed under a SWPPP prepared in accordance with the requirements of Order No. 97-03-DWQ (WDRs for Discharge of Stormwater Associated with Industrial Activities Excluding Construction Activities) issued by SWRCB under NPDES General Permit No. CAS000001 (General Permit).

CCL has an extensive surface water drainage system that consists of channels, surface/subsurface pipes, energy dissipating structures, and sedimentation basins. This system effectively protects slopes, diverts water away from the landfill, and discharges runoff into either the Santa Clara River or Castaic Creek, a tributary of the Santa Clara River. Stormwater from the Primary Canyon and the west half of the Main Canyon enters the Santa Clara River through a culvert that crosses beneath SR-126 near the landfill entrance. Stormwater from the east half of the Main Canyon, Canyon B and the proposed East Canyon expansion area drains to the east of CCL and discharges into Castaic Creek, approximately 3,000 feet from the site boundary. The discharge from this area flows through a debris basin and a reinforced concrete stormwater pipeline. All surface drainage from the landfill property flows through one or more sedimentation ponds before discharging from the site.

There are no surface water bodies within the landfill property boundaries. The surface drainage at CCL is controlled by diversion berms, drainage channels, overside drains, and sedimentation basins. Exposed soil and interim and final covers are vegetated to control erosion.

For landfill areas that have not been closed, surface water runoff is controlled by temporary berms and "V" ditches near active refuse fill areas and temporary overside drains to carry surface water from fill areas to drainage courses. Each refuse lift is sloped to promote drainage toward interim drainage-control facilities. All berms and ditches direct runoff around refuse and prevent ponding of surface water against refuse.

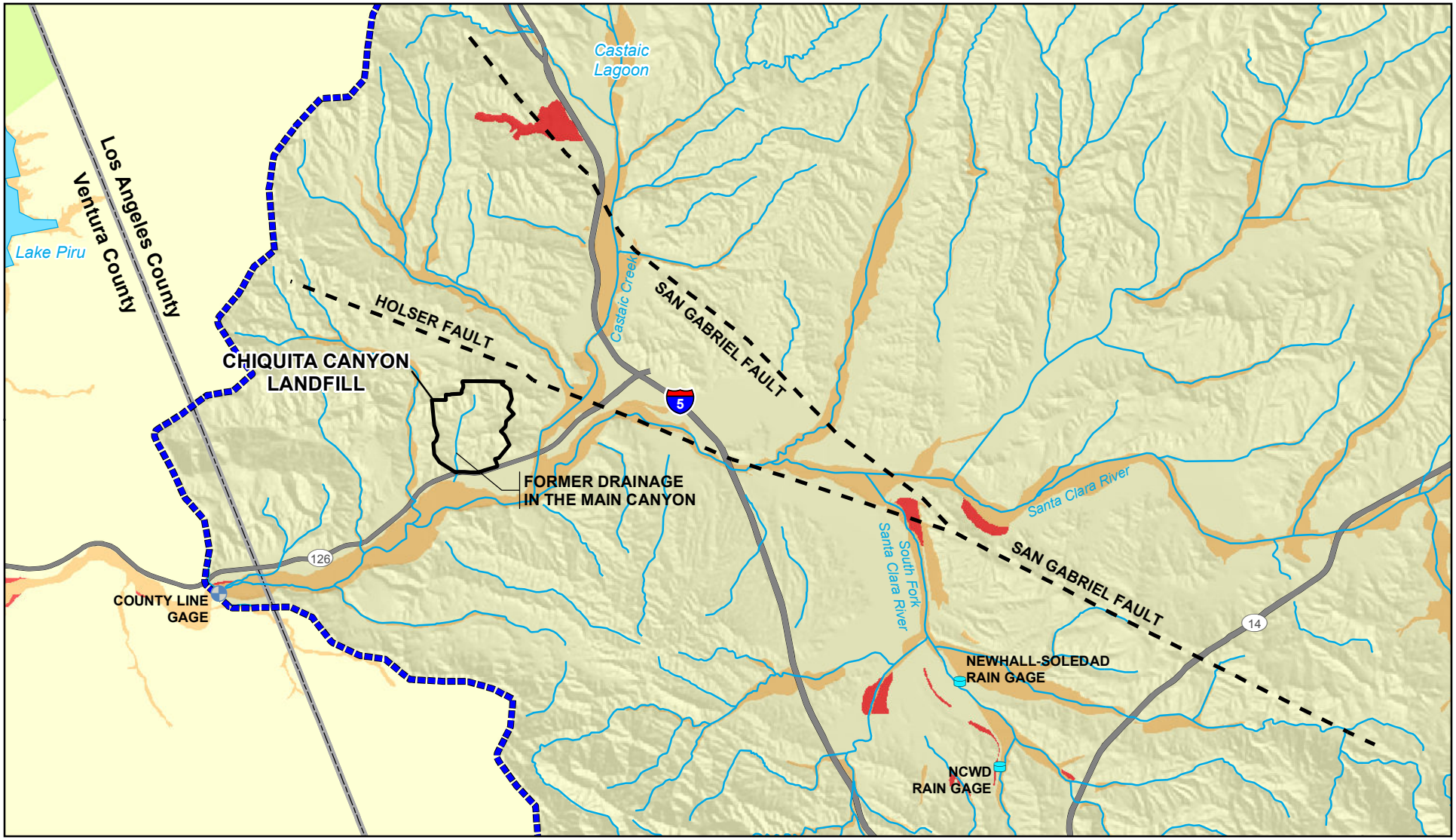
The designed landfill grades are to help minimize the diversion of runoff from one watershed to another. Runoff from watersheds surrounding the site is redirected around the landfill site perimeter to avoid run-on to the landfill.

A diversion berm designed to handle runoff from a 24-hour, 25-year storm will be installed on the up-gradient side of the composting area to divert storm water around the area. Storm runoff and excess liquid from the composting process from this area will flow to the site drainage system. The composting facility may be relocated periodically to accommodate landfill operations; the diversion berm will be relocated along with the composting operation.

The mean annual precipitation is approximately 14.45 inches (1970 to 2014), with a majority of the precipitation falling between November and March (Table 5-2). Figure 5-14 shows the annual precipitation and cumulative departure from the average for CCL.

Much of the precipitation received at CCL does not infiltrate because of the steep terrain. Surface water tends to be directed to the south and east of the site due to the steep ridgelines at the site. The northeastern portion of the site, which includes the proposed East Canyon expansion area, drains to the east into Castaic Creek located approximately 3,000 feet from the site boundary. Castaic Creek is seasonally dry and flows to the south to the Santa Clara River.

Due to topographic and engineering considerations, the current landfill grading and drainage plan diverts surface water runoff from approximately 93 acres of land in the western to the eastern watershed, and from approximately 12 acres of land in the eastern to the western watershed. This results in surface water runoff from a net 81 acres being diverted from the western to the eastern watershed. The diverted surface water runoff would flow through the existing debris basin and stormwater pipeline to Castaic Creek. Previous drainage evaluations (EMCON, 1990b and 1993) determined that the downstream drainage facilities were capable of handling the increased flows resulting from the diversion.



LEGEND

- Project Boundary
- Major Road
- Stream
- Lake
- County Boundary
- Newhall Rain Gage
- Stream Gage
- Fault Line
- Santa Clara River East Watershed Boundary
- 100-Year Floodplain
- Outside 100-Year Floodplain
- 500-Year Floodplain
- Possible But Undetermined Flood Hazards

N

0 5,000 10,000
Feet

Source: FEMA Flood Insurance Rate Maps

Figure 6-1
100-year Flood Plain
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

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6.6.1 Stormwater Monitoring

Stormwater monitoring is performed as described in the SWMP prepared by CCL, revised in April 2011 (CCL, 2011b).

Surface Water Monitoring Program. Surface water is monitored at the eastern (near the United States Postal Facility, Monitoring Point East) and the southern (at SR-126 and the landfill entrance, Monitoring Point South) discharge points from the CCL site. The following are performed, as required by the SWMP:

- Conduct quarterly visual observations at all drainage areas and utilities, and at all facility structures.
- Conduct quarterly visual observations of nonstormwater).
- Conduct visual observations of stormwater discharge during the wet season (October 1st to May 30th) to monitor for the presence of pollutants in stormwater at all facility stormwater discharge locations. Minimum of one storm event per month during the wet season that produces significant stormwater discharge.
- Collect stormwater samples of all stormwater discharges that represent the quality and quantity of the stormwater discharge from the facility during the first hour of discharge from the first storm event of the wet season and from at least one other storm event during the remainder of the wet season (samples are collected at the southern and eastern discharge points) as required by the General Permit.
- Collect stormwater samples of all stormwater discharges for qualifying storm events as required by RWQCB Order No. R4-2011-0052.
- Analyze stormwater samples for the following parameters:
  - Ammonia
  - Biological oxygen demand
  - Chemical oxygen demand
  - Cyanide, total
  - Specific conductance
  - Nitrate + nitrite nitrogen
  - Oil and grease (in lieu of total organic carbon)
  - Hydrogen (ion) concentration (pH)
  - Phosphorous, total
  - Sulfate
  - Total dissolved solids
  - Total suspended solids
  - Metals, total
  - Volatile organic compounds

The effectiveness of the program is evaluated annually during the required annual reports. Effectiveness is determined by observing trends in analytical data from stormwater sampling events and results of annual inspections. Significant increasing trends in pollutant concentrations at a sample point may indicate a need for review or a modification of existing stormwater management practices. Order No. R4-2011-0052 establishes benchmark values for many of the monitoring parameters. If stormwater test results exceed benchmark values, then the effectiveness of the BMPs are further evaluated.

Surface Water Quality Monitoring Results. The surface water quality monitoring results for the General Permit are presented in the Annual Surface Water Quality Monitoring Reports. These are prepared by CCL and submitted annually to RWQCB. The surface water quality monitoring results for Order No. R4-2011-0052 sampling events are prepared by RTF&A and submitted to RWQCB in the semi-annual groundwater reports.

Proposed Surface Water Monitoring System. The Proposed Project includes a new landfill entrance on Wolcott Way and developing new entrance facilities in this area, as described in Chapter 2.0, Project Description. Currently, the site area adjacent to Wolcott Way is undeveloped. Accordingly, a third surface water sampling point will be added to monitor the surface water quality of the discharge from the new entrance area. The two existing sampling points will continue to be monitored as part of the Proposed Project.

6.7 Potential Impacts

6.7.1 Standards of Significance

Potential impacts on surface water quality could occur as a result of solid waste placement activities. If not properly controlled, the amount of silt and debris carried in drainage paths during a storm could increase. This increase in silt could result from the removal of vegetation, exposure of cut slopes prior to filling or vegetating, and exposure of the solid waste area, which consists predominantly of soil cover.

During periods of heavy precipitation, both excavated and filled areas would be subject to erosion if vegetation is not established. Erosion of these areas could increase the amount of suspended soil particles carried by surface water runoff into drainage channels both onsite and offsite.

If surface water management and/or drainage systems are not properly designed, constructed, and maintained, potential impacts could result from stormwater runoff flooding both onsite and offsite, as well as erosion and discharge of silt.

The *California Environmental Quality Act (CEQA) Guidelines* define a significant surface water impact as one that:

- Substantially alters existing drainage patterns
- Substantially increases erosion of surface runoff and causes flooding
- Creates or contributes to runoff that exceeds drainage system capacity
- Places housing within a 100-year flood area
- Impedes or redirects flood flows within a 100-year flood hazard area
- Exposes people or structures to significant risk of loss, injury, or death from flooding, or contributes to inundation by seiche, tsunami, or mudflow

6.7.2 Proposed Project

Potential impacts of the Proposed Project related to surface water drainage are described below with respect to the above standards of significance.

6.7.2.1 Drainage Patterns, Erosion, Flooding, and Drainage System Capacity

There is a potential for the Proposed Project to result in the following surface water impacts:

- Substantially alter existing drainage patterns
- Substantially increase erosion of surface runoff and cause flooding
- Create or contribute to runoff that exceeds drainage system capacity

The existing drainage patterns will be altered within CCL during implementation of the Proposed Project. This will include constructing, operating, and maintaining a precipitation drainage and control system in accordance with the following regulatory criteria:

- NPDES General Permit requirements issued under SWRCB Order No. 97-03-DWQ and the associated site-specific SWPPP and SWMP
- CCR Title 27 requirements, including Sections 20365, 20820, and 21150
- LACDPW requirements, including Policy on Levels of Flood Protection

As required, this system will be designed and constructed to carry the peak discharge resulting from the 100-year, 24-hour storm event, as required by Title 27, and the stormwater runoff volume resulting from the Capital Flood event (50-year, 24-hour storm), as required by LACDPW. In addition, the system will limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping under the required design storms (100-year, 24-hour) for Class III landfills, as required by Title 27, and the Capital Flood event (50-year, 24-hour storm), as required by LACDPW.

This drainage and control system will prevent substantial erosion of surface runoff and will not cause flooding. Drainage patterns will not be altered downstream of the two discharge points from the CCL site. Therefore, no mitigation measures would be required, because all onsite drainage patterns will be altered in accordance with applicable regulatory requirements, and offsite drainages will not be altered.

6.7.2.2 100-Year Flood Area

There is no potential for the Proposed Project to result in the following surface water impacts:

- Place housing within a 100-year flood area
- Impede or redirect flood flows within a 100-year flood hazard area

As shown in Figure 6-1, the landfill site is above the 100-year floodplain of the Santa Clara River, as identified by FEMA. No elements of the Proposed Project will be located within the 100-year flood area. Stormwater at the landfill site is controlled by diversion berms, drainage channels, oversize drains, and sedimentation basins. Exposed soil and interim and final covers are vegetated to control erosion. All surface drainage from the landfill property flows through one or more sedimentation ponds before discharging from the site.

These controls, together with the landfill site being located above the 100-year floodplain, ensure that the Proposed Project will not impede or redirect flood flows within a 100-year flood hazard area. Therefore, no mitigation measures would be required.

6.7.2.3 Exposure from Flooding

As described above, there is a potential for the Proposed Project to result in flooding, which could expose people or structures to risk of loss, injury, or death. However, because the drainage and control system will be constructed, operated, and maintained in accordance with regulatory criteria (NPDES, Title 27, and LACDPW) as described above, the potential for flooding would not be significant. Therefore, no mitigation measures would be required.

6.7.2.4 Contribution to Inundation by Seiche, Tsunami, or Mudflow

There is no potential for the Proposed Project to contribute to inundation by tsunami or seiche, as described below:

- **Tsunami** is a series of waves when a body of water, such as an ocean, is rapidly displaced on a massive scale as a result of earthquakes, volcanic eruptions, and other mass movements above or below water. The effects of a tsunami can range from unnoticeable to devastating. Most damage is caused by the huge mass of water behind the initial wave front, as the height of the sea continues rising fast and floods powerfully into a coastal area. CCL is too far inland (approximately 30 to 40 miles) and high in elevation (greater than 900 feet above mean sea level) to be significantly threatened by tsunami. Therefore, no mitigation measures would be required.
- **Seiche** is a standing wave in an enclosed or partially enclosed body of water that can be caused on lakes, reservoirs, bays, and seas by resonances by one or more of a number of factors, most often meteorological effects (wind and atmospheric pressure variations), seismic activity, or by tsunamis. There are no enclosed water bodies at or in the vicinity of CCL. Therefore, no mitigation measures would be required.

There is a potential for the Proposed Project to contribute to inundation by mudflow as described below:

- **Mudflow** is a rapid and fluid type of downhill mass wasting, consisting of heterogeneous debris lubricated with a large amount of water caused by heavy rainfall or high levels of groundwater. Similar terms are debris flow (on steep slopes) and mudslide (not very liquid). As described in Section 5.7.2, there is a potential for debris flow during repeated heavy rains, within the natural drainages above the proposed natural slopes. This debris flow has the potential to expose people to risk of injury or death. As described in Mitigation Measure GH-1, the proposed design should allow for the cleanup or control of any debris flows that may encroach into the landfill cell and perimeter maintenance road from the natural drainages and slopes that are not included in the proposed grading and construction of drainage/debris basins. The potential to expose people to risk of injury or death from this debris flow would be mitigated by requiring operations staff to avoid the potential debris flow areas after an appropriate amount of waiting time following heavy and sustained precipitation events (Mitigation Measure SW-1).

6.8 Mitigation Measures

Potential impacts of the Proposed Project related to surface water drainage considerations will be addressed by implementing the following mitigation measures.

SW-1 There is a potential for mudflow (i.e., debris flow) during repeated heavy rains within existing drainage areas at the subject site. The proposed design should evaluate and specify an appropriate amount of waiting time following heavy and sustained precipitation events before CCL staff occupy the area, to avoid the potential to expose people to the risk of injury or death from this debris. This would supplement Mitigation Measure GH-1, which specifies that the proposed design should allow for the cleanup or control of any debris flows that may encroach into the landfill cell and perimeter maintenance road from the natural drainages and slopes that are not included in the proposed grading and construction of drainage/debris basins.

6.9 Significance After Mitigation

Potential impacts of the Proposed Project related to surface water drainage will be less than significant after implementation of the mitigation measure described above.

6.10 Cumulative Impacts

Increased runoff from development of previously undisturbed land has the potential to add incrementally to flooding impacts. However, the proponents of other developments within the immediate watershed would be required to provide engineered drainage facilities and coordinate with appropriate permitting agencies, including LACDPW. These requirements would mitigate these potential impacts to below a level of significance. Each project must demonstrate to the County that floodwaters will be accommodated by onsite drainage facilities so that there is no negative impact off-site; therefore, no significant cumulative surface water runoff/ flooding impacts are expected from the Proposed Project.

CHAPTER 7.0

Water Quality

7.1 Introduction

This chapter evaluates surface water and groundwater quality related to the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project).

7.2 Methodology

This evaluation is based on data collected as part of the routine groundwater monitoring program, the stormwater monitoring program, the site Hydrogeologic Investigation (RTF&A, 2012b), the plans for the Proposed Project, compliance with the applicable regulations summarized below, and other applicable information. The three data collection programs are as follows:

Surface Water – Stormwater Monitoring Program (SWMP): Surface water monitoring data are collected and reported pursuant to National Pollutant Discharge Elimination System (NPDES) General Permit requirements issued under State Water Resources Control Board (SWRCB) Order No. 97-03-DWQ, Regional Water Quality Control Board (RWQCB) Order No. R4-2011-0052, and the associated site-specific Stormwater Pollution Prevention Plan (SWPPP) and SWMP. Data are reported in annual and semiannual reports submitted to RWQCB. The current monitoring and reporting program is described in Chapter 6.0, Surface Water Drainage.

Groundwater – Routine Groundwater Monitoring Program: Groundwater monitoring data are collected and reported pursuant to Waste Discharge Requirement (WDR) Order No. 98-086 and Monitoring and Reporting Program (MRP) No. 6231, issued by RWQCB on November 4, 1998. Data are reported in semiannual and annual reports submitted to RWQCB. The current monitoring and reporting program and recent groundwater quality data are summarized in Section 7.6. Recent annual and semiannual reports are listed below; the data and results contained in these reports are summarized in Section 7.6:

- *Semi-Annual Groundwater Monitoring Report, First and Second Quarter 2013* (RTF&A, 2013a)
- *Semi-Annual Groundwater Monitoring Report, Third and Fourth Quarter 2013* (RTF&A, 2013b)
- *2013 Annual Groundwater Monitoring Report* (RTF&A, 2014b)

Groundwater – Site Hydrogeologic Investigation: Hydrogeologic information was collected and reported as part of the site Hydrogeologic Investigation (RTF&A, 2012b). These data are summarized in Chapter 5.0, Geology and Hydrogeology.

7.3 Regulatory Setting

7.3.1 Surface Water

The regulatory setting for surface water quality is summarized in Chapter 6.0, Surface Water Drainage.

7.3.2 Groundwater

Title 27, *California Code of Regulations* (CCR), contains the current regulations of the California Department of Resources Recycling and Recovery (CalRecycle, previously California Integrated Waste Management Board), and SWRCB pertaining to waste disposal on land. Subchapter 3, Water Monitoring, from Chapter 3 (Criteria for all Waste Management Units, Facilities, and Disposal Sites) of Title 27 is relevant to water quality. The relevant sections from Subchapter 3 are summarized below.

Section 20380, SWRCB – Applicability: Subchapter 3 specifies the requirements for water quality monitoring and response programs for detecting, characterizing, and responding to releases to groundwater, surface water, or the unsaturated zone. These requirements apply during the Disposal Unit's active life and closure

period. After closure of the unit, these requirements apply to the post-closure maintenance period of the unit unless (1) the unit has been in compliance with the Water Quality Protection Standard for 3 consecutive years, or (2) the unit is clean-closed.

Section 20385 – Required Programs: Monitoring and response programs are required, as approved by RWQCB, for each Disposal Unit (landfill) as follows in accordance with Section 20385 of Title 27:

- Detection Monitoring Program (Section 20420)
- Evaluation Monitoring Program (Section 20425)
- Corrective Action Program (Section 20430)

RWQCB will specify in facility-specific WDRs the specific type, or types, of monitoring programs required and the specific elements of each monitoring and response program.

Section 20390 – Water Quality Protection Standards (Water Standard): For each Disposal Unit, RWQCB will establish water quality protection standards (Water Standard) in the WDRs. This Water Standard will consist of a list of constituents of concern (COC) (under Section 20395), concentration limits (under Section 20400), and the point of compliance (POC) and all monitoring points (under Section 20405). The Water Standard will apply during the active life of the Disposal Unit, the closure period, and the post-closure maintenance period, and during any compliance period (under Section 20410).

Section 20395 – Constituents of Concern (COC): For each Disposal Unit, RWQCB will specify in the WDRs the COCs to which the Water Standard applies.

Section 20400 – Concentration Limits: For each COC, CCL will propose concentration limits that will be revised by RWQCB. RWQCB will approve, modify, or disapprove each concentration limit. RWQCB will specify the final approved concentration limits in the WDRs.

Section 20405 – Monitoring Points and Point of Compliance (POC): For each Disposal Unit, RWQCB will specify in the WDRs the POC at which the Water Standard applies. The POC is a vertical surface located at the hydraulically downgradient limit of the Disposal Unit that extends through the uppermost aquifer underlying the Disposal Unit. For each Disposal Unit, RWQCB will specify monitoring points along the POC and additional monitoring points at locations at which the Water Standard applies and at which monitoring should be conducted.

Section 20410 – Compliance Period: RWQCB will specify in the WDRs a compliance period for each Disposal Unit. The compliance period is the minimum period of time during which the water quality monitoring will be conducted.

Section 20415 – General Water Quality Monitoring and System Requirements: The discharger will establish a groundwater, surface water, and unsaturated zone monitoring system for each Disposal Unit to determine background conditions, meet general water quality monitoring requirements, and the specific requirements of the specific type, or types, of monitoring programs (Detection Monitoring Program [DMP], Evaluation Monitoring Program [EMP], or Corrective Action Program [CAP]) required in the WDRs.

Section 20420, SWRCB – Detection Monitoring Program (DMP): A DMP shall be established to detect, at the earliest possible time, a release from the Disposal Unit and comply with the applicable provisions of Section 20415.

Section 20425, SWRCB – Evaluation Monitoring Program (EMP): If necessary, an EMP shall be established to assess the nature and extent of a release from the Disposal Unit and to design a CAP meeting the requirements of Section 20430.

Section 20430, SWRCB – Corrective Action Program (CAP): If necessary, a CAP shall be established to remediate releases from the Disposal Unit, and achieve compliance with the Water Standard adopted under Section 20390 and specified by RWQCB for corrective action.

7.4 Regional and Local Setting

The regional and local settings for surface water are described in Chapter 6.0, Surface Water Drainage. The regional and local settings for groundwater are described in Chapter 5.0, Geology and Hydrogeology.

7.5 Surface Water Monitoring at CCL

The current surface water monitoring and reporting program and proposed surface water monitoring locations for the Proposed Project are described in Chapter 6.0, Surface Water Drainage.

7.6 Groundwater Monitoring at CCL

7.6.1 Groundwater Monitoring and Reporting Program

Quarterly monitoring and semi-annual reporting are required by the current WDRs and MRP for the facility, which contain the requirements for groundwater sampling and analysis, and the evaluation of analytical results (WDR Order No. 98-086 and MRP No. 6231, issued by RWQCB on November 4, 1998). The current groundwater monitoring system is summarized in Section 5.6.3. As required, CCL has been conducting a DMP, EMP, and CAP.

Sampling and analytical requirements include quarterly groundwater monitoring for monitoring parameters. Additional monitoring for COCs is conducted at 5-year intervals, for background sampling for new constituents when new wells are installed, or when “triggered” by the release discovery response process. The last 5-year COC scan was conducted in October 2011.

The quarterly groundwater monitoring consists of the following for the DMP:

- Monitoring vadose well SW-1, gas probes GP-9 and GP-10 (the deepest probe is designated VP-1 at GP-10), and lysimeter LP-1
- Measuring groundwater levels in all wells
- Collecting groundwater samples from wells DW-1, DW-3, DW-7, DW-8, DW-12, DW-14, DW-15, DW-16, DW-17, DW-18, DW-20, DW-21, DW-28, and PZ-4, and analyzing for the site monitoring parameters
- Collecting an annual leachate sample (“LC-1”) and analyzing for COCs

Additional sampling and analysis is performed for select wells, as required, for the EMP and CAP being implemented. The combined DMP, EMP, and CAP monitoring and reporting schedule are shown below:

Semiannual Period	Reporting Period	Sampling Months	Report Due
First	January - June	January and April	June 30
Second	July - December	July and October	December 31
Annual	January - December		March 1

7.6.1.1 Vadose Zone Monitoring

Vadose well SW-1 and gas probes GP-9 and GP-10 are checked for the presence of liquids using an electric water-level sounder; no measurable quantities of liquid have been noted. Lysimeter LP-1 is monitored, but no soil moisture has been recovered since monitoring started in January 1991.

7.6.1.2 Water Level Measurements

Static water levels in all monitoring network wells are measured using an electric water-level sounder prior to purging and sampling.

7.6.1.3 Groundwater Sampling and Analysis

Quarterly groundwater samples are typically collected during the months of January, April, July, and October. The low-flow groundwater sampling procedure is used in all wells.

Field parameters monitored and recorded during low-flow purging consist of specific conductance, pH, temperature, dissolved oxygen, and oxygen reduction potential. Groundwater samples are analyzed by a state-certified laboratory for the following monitoring parameters:

- Bicarbonate ($CaCO_3$)
- Boron (total)
- Chemical oxygen demand (COD)
- Chloride
- Nitrate as N
- Nitrite as N
- Sodium (total)
- Sulfate
- Total dissolved solids (TDS)
- Total hardness as $CaCO_3$
- Volatile organic compounds (VOC)

In 2013, East Canyon well DW-23 sampled and analyzed for a partial COC to develop a background water quality data (RTF&A, 2014b).

7.6.1.4 Groundwater Quality Monitoring Results

Historical results related to the EMP and CAP are summarized below, followed by the recent results for 2013 for the DMP, EMP, and CAP.

7.6.1.4.1 Historical Results for EMP and CAP

Evaluation Monitoring Program – DW-16

In 2004, fourth quarter retest samples from well DW-16 contained two VOCs, trichloroethene (TCE) and tetrachloroethene (PCE), at “trace” concentrations (greater than or equal to the method detection limit [MDL] and less than the practical quantitation limit [PQL]), so a release was reported on December 10, 2004 (RTF&A, 2004c). In response to the determination of a release, an Amended Joint Technical Document (JTD) containing a proposed EMP was submitted to RWQCB (RTF&A, 2005b). The Amended JTD included proposed EMP evaluation methods for assessing the VOCs found at well DW-16. Those methods have been implemented, pending RWQCB approval of the proposed EMP. The Engineering Feasibility Study (EFS) for DW-16 was submitted to RWQCB on June 7, 2005 (RTF&A, 2005c). A time series chart for VOCs detected in groundwater samples from DW-16 is provided in Figure 7-1.

The Amended JTD (RTF&A, 2005b) included a preliminary assessment of the nature and extent of the release, which appeared to result from landfill gas (LFG) migration from the adjacent unlined Primary Canyon. The EFS identified LFG system improvements as a corrective action measure. In 2005, CCL conducted detailed performance testing and evaluation of the Primary Canyon LFG collection system to identify potential areas for improvements. Since 2006, CCL has completed the design and installation of additional LFG controls at Primary Canyon.

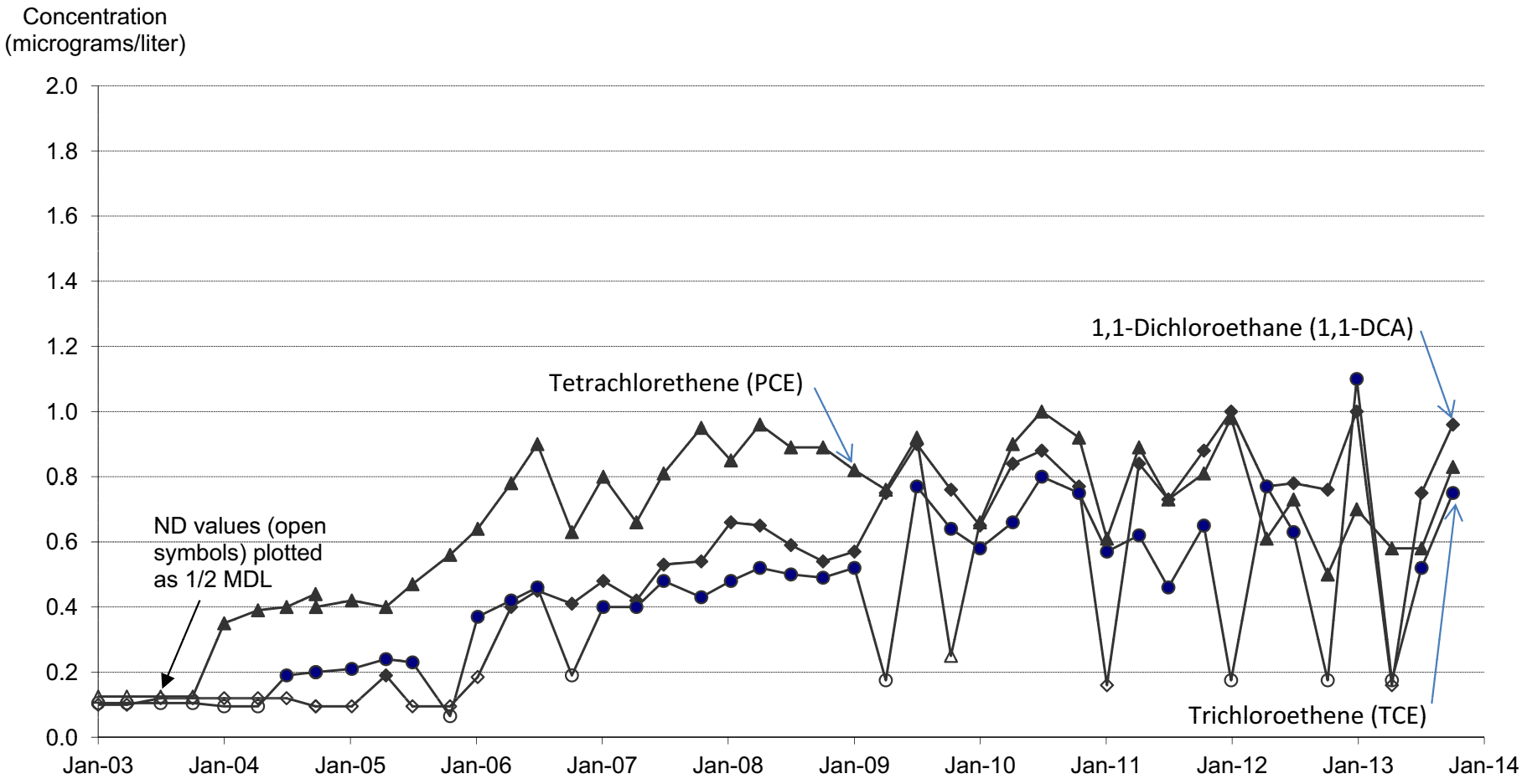

FIGURE 7-1
VOCs Detected
Well DW-16 Time Series Plot
Chiquita Canyon Landfill
Master Plan Revision

Source: R.T. Frankian and Associates

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Evaluation Monitoring Program – DW-20

In 2003, second quarter retest samples from well DW-20 contained the VOC 1, 1-dichloroethane (1,1-DCA) at concentrations greater than the PQL, so a release was reported on July 22, 2003 (RTF&A, 2003c). In response to the determination of a release, an Amended JTD containing a proposed EMP and EFS was submitted to RWQCB (RTF&A, 2003b). The Amended JTD included proposed EMP evaluation methods for assessing the VOCs found at well DW-20, and those methods have been implemented, pending RWQCB approval of the proposed EMP. A time series chart for VOCs detected in groundwater samples from DW-20 is provided in Figure 7-2.

The Amended JTD (RTF&A, 2003b) included a preliminary assessment of the nature and extent of the release, which appeared to result from LFG migration from Canyon D, the nearest landfill area. The EFS identified installation of additional vertical LFG extraction wells in Canyon D as the corrective action measure. CCL has completed the design and installation of additional LFG controls at Canyon D.

Corrective Action Programs – DW-1 and DW-3

A CAP is in progress at well DW-1, downgradient from Primary Canyon, and at well DW-3, downgradient from Canyon B. VOCs have been historically reported in groundwater samples from both wells. Implemented corrective action measures at both disposal areas include LFG collection system improvements aimed at reducing subsurface gas migration to groundwater. Time series charts for VOCs detected in groundwater samples from wells DW-1 and DW-3 are provided in Figures 7-3 and 7-4, respectively.

7.6.1.4.2 Recent Results for 2013

The results for the DMP, EMP, and CAP are presented below for 2011. A summary of the statistical analysis of the inorganic monitoring parameters are presented in Table 7-1 for 2013. Summaries of VOCs detected are presented in Table 7-2 for 2013.

Detection Monitoring Program

The intent of the DMP is to assess groundwater quality and determine whether it is being affected by the landfill. The quarterly assessments of monitoring parameters are made through both nonstatistical and statistical analyses, as described in the WDRs.

The nonstatistical VOC analysis is a comparison of each detected VOC with its respective MDL and PQL. A release is tentatively indicated if the groundwater sample contains two or more VOCs at concentrations greater than their respective MDLs, or one or more VOCs at concentrations above the respective PQLs.

The nonstatistical qualitative trend analysis (QTA) for monitoring parameters including COD, chloride, electrical conductivity, nitrate (as N), nitrite, pH, sulfate, and total hardness (as $CaCO_3$) is performed using time series plots for each reporting period, as specified in the WDRs. A statistical analysis for these parameters is conducted after each 5-year COC scan.

The statistical analysis of the remaining monitoring parameters is the control chart approach contained in the JTD (EMCON, 1997c). This intrawell approach involves using the historical water chemistry for each well as the background data for that well, rather than comparing current water chemistry to data from a different, hydraulically upgradient well. The statistical results are presented in a series of control charts (Appendix E of RTF&A, 2014b) for each well/monitoring parameter pair; the results are tabulated in Table 7-1.

For the 2013 monitoring year, VOCs were not detected in the DMP monitoring points. In general, the results reported during the 2013 monitoring period are within historical ranges at each monitoring point.

The DMP statistical summary is provided on Table 7-1 for 2013. For the monitoring parameters evaluated statistically in the first quarter, none of the compliance values exceeded the control limits. For the monitoring parameters evaluated statistically in the second through fourth quarters, only the compliance value for boron exceeded the control limit for the DW-18 sample. As previously reported, boron concentrations increased in upgradient wells DW-8 and DW-19 (prior to destruction) starting in 2008, so the increased boron at well DW-18 is not considered evidence of a landfill release. Based on evaluation of the VOC results, the QTA time series plots, and the statistical analysis results, there was no evidence of a landfill release in the DMP for 2013.

Evaluation Monitoring Program – DW-16

The landfill release identified at well DW-16 was initially indicated by the presence of trace concentrations of the VOCs TCE and PCE. In the 2013 samples from well DW-16, low to trace concentrations of TCE, 1,1-DCA, and PCE were present (Table 7-2). The proposed EMP evaluation method is to plot VOC concentrations versus time (time series plots) and evaluate trends (Figure 7-2). The VOC concentrations in samples from DW-16 have increased since January 2004, when VOCs were first reported. However, these VOC concentrations remain at low levels, less than 1 μg/L. For the monitoring parameters evaluated statistically, no compliance values exceeded their control limits.

Evaluation Monitoring Program – DW-20

The landfill release identified at well DW-20 was initially indicated by the presence of various VOCs (1,1-DCA, CFC 12, TCE, and PCE) at trace to low concentrations. The only VOC present in the 2011 samples from well DW-20 was 1,1-DCA, which was reported at trace concentrations in the first and fourth quarter samples (Table 7-2). The proposed EMP evaluation method is to plot VOC concentrations versus time (time series plots) and evaluate trends (Figure 7-4). The VOC concentrations in groundwater samples from well DW-20 have declined through time, with only 1,1-DCA present at trace concentrations.

For the monitoring parameters evaluated statistically, the only compliance values at well DW-20 that exceeded control limits were bicarbonate in the first and second quarters and boron in the third quarter. Given the similar increases in bicarbonate concentrations in nearby upgradient wells DW-8 and DW-28, the recent increase in bicarbonate concentration at well DW-20 does not appear to be evidence of a release from the landfill. As previously reported, boron concentrations increased in upgradient wells DW-8 and DW-19 (prior to destruction) starting in 2008, so the increased boron at well DW-20 sample is not considered evidence of a landfill release.

Corrective Action Program

The CAP consists of well DW-1, downgradient from Primary Canyon, and well DW-3, downgradient from Canyon B, with VOCs historically reported from each. Implemented corrective action measures at both disposal areas include LFG collection system improvements aimed at reducing gas migration to groundwater.

Determination of Compliance: As specified in the CAP, the COCs at both wells DW-1 and DW-3 are those VOCs identified using United States Environmental Protection Agency (EPA) Method 8260, and the concentration limits are the respective MDLs. For the first, second, and third quarters of 20131, the DW-1 samples had trace to low concentrations of 1,1-DCA and PCE (Table 7-2). CFC 12 was the only VOC detected in the samples collected from well DW-3 in 2013 (Table 7-2). These VOC results remain consistent with past sampling events at wells DW-1 and DW-3.

The analytical results for metals and general water quality parameters are summarized with the historical groundwater chemistry in Appendixes G and I of the Annual Report (RTF&A, 2014b). The QTA time series plots for monitoring parameter/well pairs are presented in Appendix D. In general, the results reported this monitoring period are within historical ranges at the site. For the CAP monitoring parameters evaluated statistically at wells DW-1 and DW-3, none of the compliance values exceeded the control limits.

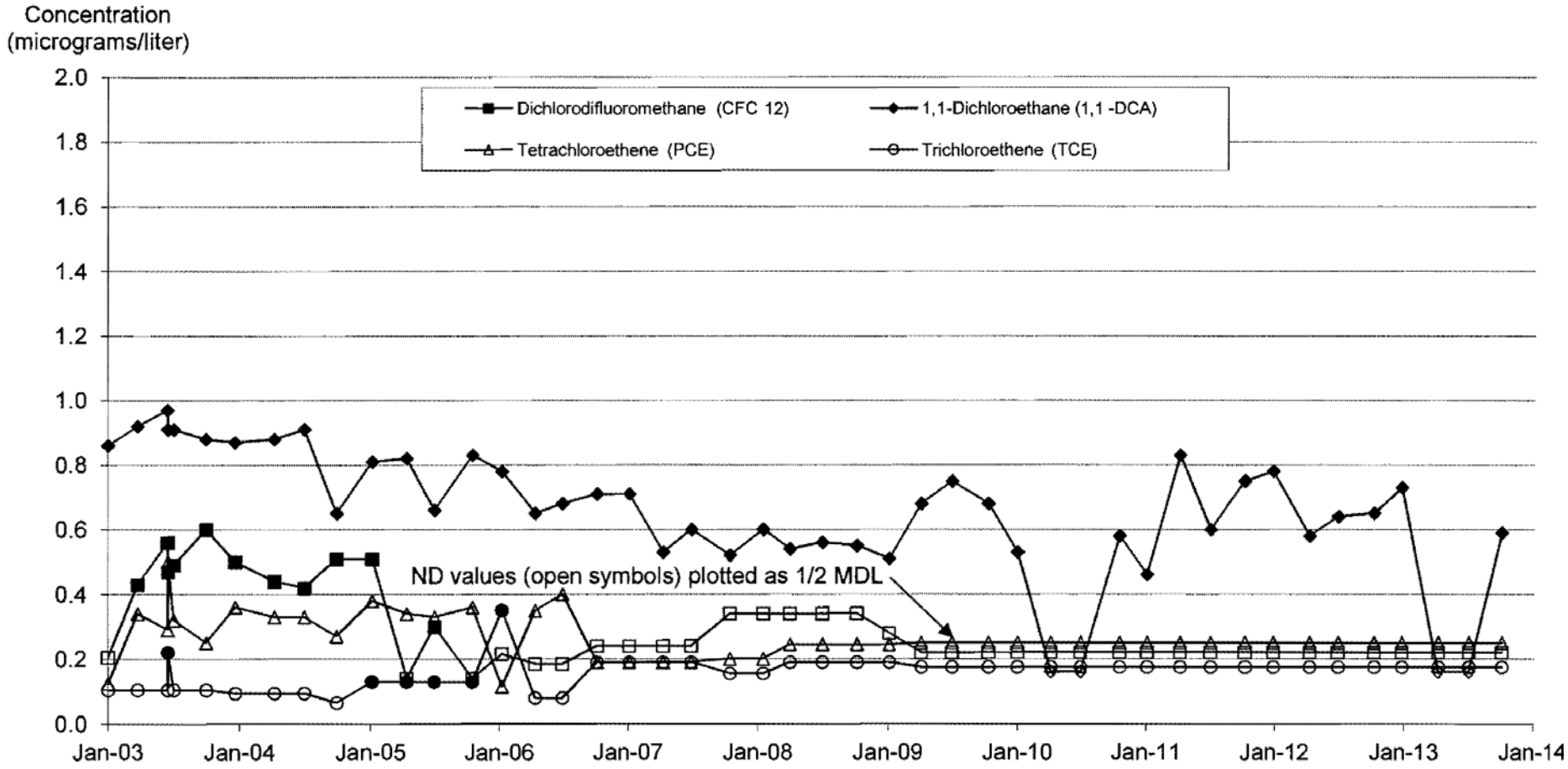

FIGURE 7-2
VOCs Detected
Well DW-20 Time Series Plot
Chiquita Canyon Landfill
Master Plan Revision

Source: R.T. Frankian and Associates

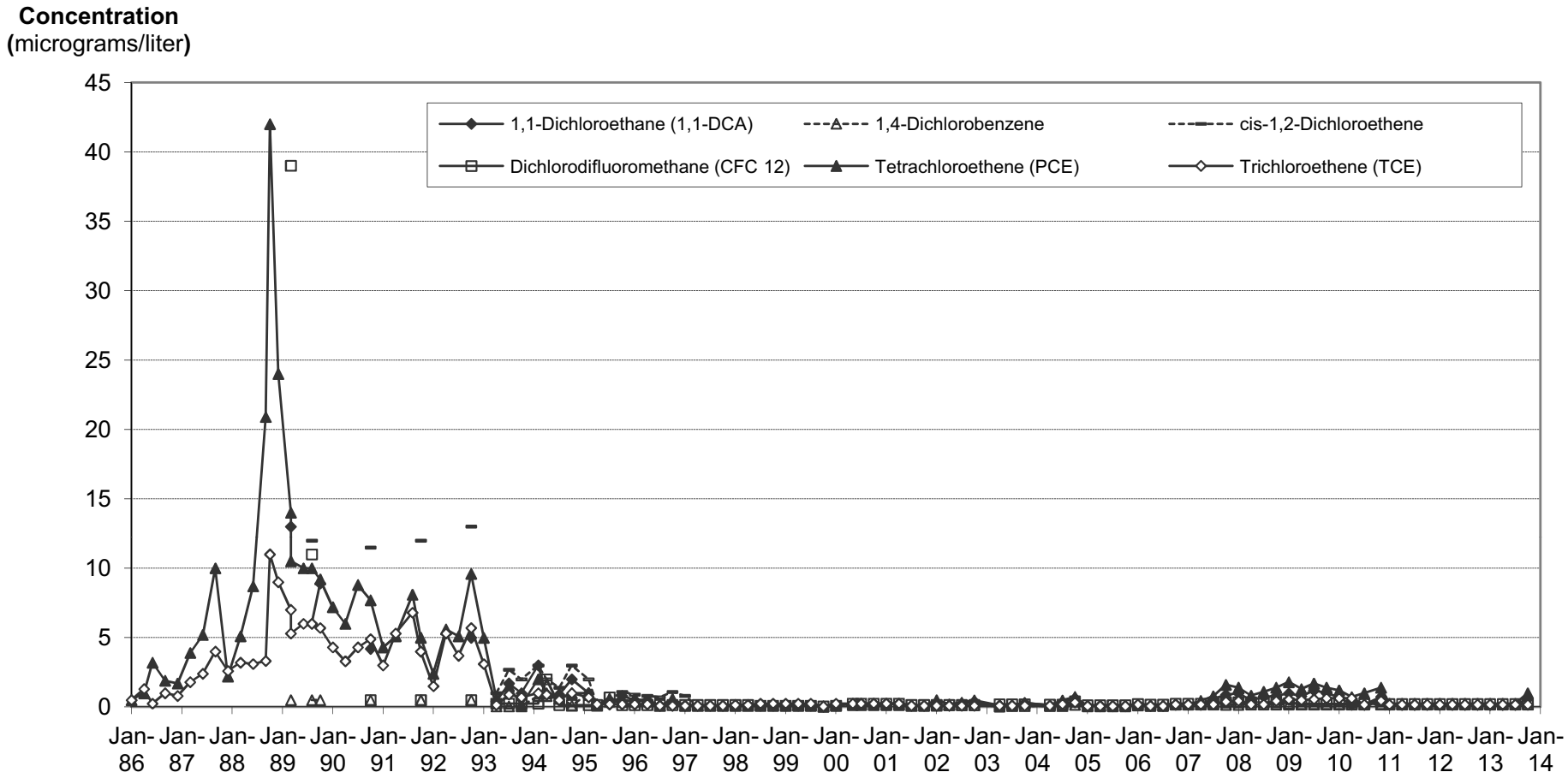

FIGURE 7-3
VOCs Detected
Well DW-1 Time Series Plot
Chiquita Canyon Landfill
Master Plan Revision

Source: R.T. Frankian and Associates

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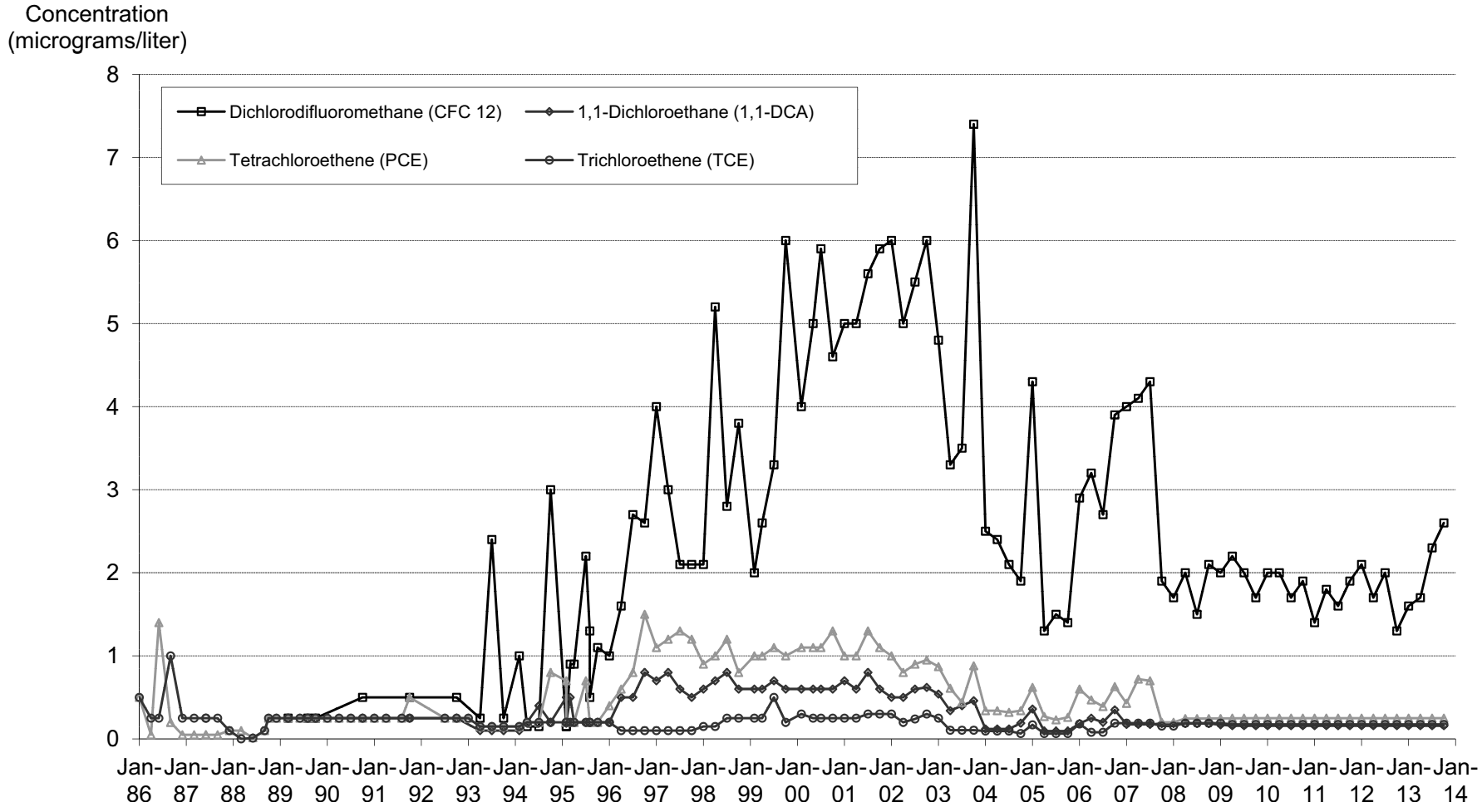

FIGURE 7-4
VOCs Detected
Well DW-3 Time Series Plot
Chiquita Canyon Landfill
Master Plan Revision

Source: R.T. Frankian and Associates

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TABLE 7-1
Statistical Analysis Results in 2013
Chiquita Canyon Landfill

Groundwater Monitoring Point	First Quarter 2013				Second Quarter 2013			
	Bicarbonate	Boron	Sodium	TDS	Bicarbonate	Boron	Sodium	TDS
DW-1	(1)	W	W	W	(1)	(1)	(1)	W
DW-3	W	W	W	(1)	(1)	W	W	(1)
DW-7	(1)	W	W	(1)	(1)	W	W	(1)
DW-8	(1)	W	W	(1)	(1)	W	W	(1)
DW-12	(1)	W	W	W	(1)	W	W	(1)
DW-14	W	W	W	W	W	W	W	W
DW-15	(1)	W	W	(1)	(1)	W	W	(1)
DW-16	W	W	W	W	W	W	W	W
DW-17	W	(1)	W	W	W	W	W	W
DW-18	W	W	W	W	W	E	W	W
DW-20	E	W	(1)	W	E	W	(1)	W
DW-21	(1)	W	W	W	(1)	W	W	W
DW-28	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
PZ-4	W	W	W	(1)	W	W	(1)	(1)

TABLE 7-1
Statistical Analysis Results in 2013
Chiquita Canyon Landfill

Groundwater Monitoring Point	Third Quarter 2013				Fourth Quarter 2013			
	Bicarbonate	Boron	Sodium	TDS	Bicarbonate	Boron	Sodium	TDS
DW-1	(1)	(1)	(1)	W	(1)	W	(1)	W
DW-3	(1)	W	W	(1)	(1)	W	W	(1)
DW-7	(1)	W	W	(1)	(1)	W	W	(1)
DW-8	W	W	W	(1)	(1)	W	W	(1)
DW-12	(1)	W	W	(1)	(1)	W	W	(1)
DW-14	W	W	W	W	W	W	W	(1)
DW-15	(1)	W	W	(1)	(1)	W	W	(1)
DW-16	W	W	W	W	W	W	W	W
DW-17	W	W	W	W	(1)	W	W	W
DW-18	W	E	W	W	W	E	W	W
DW-20	W	E	(1)	W	W	W	(1)	W
DW-21	(1)	W	W	W	(1)	W	(1)	W
DW-28	W	(1)	W	W	W	(1)	W	W
PZ-4	W	W	(1)	(1)	W	W	(1)	(1)

Notes:

Statistical analysis performed using all values between past 1 and 6 years as background and values for the most recent four quarters as compliance concentrations. Shapiro-Wilk normality test was used to test for normal data distribution.

Shewhart-CUSUM Control Chart Results: W = Within control limit, E = Exceeds control limit.

(1) Not analyzed due to non-normal data distribution and data could not be normalized using "Ladder of Powers" transformation.

(2) Not analyzed due to insufficient number of data.

TABLE 7-2
Detected Volatile Organic Compounds in 2013
Chiquita Canyon Landfill

EMP VOCs (µg/L)	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	DW-16	DW-20	DW-16	DW-20	DW-16	DW-20	DW-16	DW-20
1,1-DCA	1.0	0.73 tr	nd	nd	0.75 tr	nd	0.96 tr	0.59 tr
Dichloromethane (Methylene Chloride)	nd	nd	nd	nd	0.41 tr	nd	0.43 tr	nd
TCE	1.1	nd	nd	nd	0.52 tr	nd	0.75 tr	nd
PCE	0.70 tr	nd	0.58 tr	nd	0.58 tr	nd	0.83 tr	nd

CAP VOCs (µg/L)	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter	
	DW-1	DW-3	DW-1	DW-3	DW-1	DW-3	DW-1	DW-3
1,1-DCA	nd	nd	nd	nd	nd	nd	0.58 tr	nd
CFC 12	nd	1.6	nd	1.7	nd	2.3	nd	2.6
PCE	nd	nd	nd	nd	nd	nd	1.0	nd

Notes:

VOC concentrations in micrograms per liter.

CFC 12 = dichlorodifluoromethane

µg/L = micrograms per liter

nd = not detected

tr = estimated (trace) concentration; analyte detected above MDL, but below PQL

Demonstration of Effectiveness: Time series plots of VOCs detected in 2013 illustrate trends in VOC concentrations through time at well DW-1 (Figure 7-3) and at well DW-3 (Figure 7-4). Samples with analyte concentrations less than the MDL (nondetected) were plotted at one-half the MDL. The VOC concentrations from both the DW-1 and DW-3 samples are within historical ranges. At well DW-1, the absence of detectable VOCs in the 2011, 2012, and first three quarter 2013 samples appears to be returning to 2006 levels. At well DW-3, the VOC concentrations appear to be generally decreasing through time, with the 2013 results relatively unchanged from 2008.

Corrective action measures are continuing to be implemented at the landfill. Corrective action measures at both the Primary Canyon and Canyon B disposal areas include LFG collection system improvements aimed at reducing gas migration to groundwater. In 2009, CCL identified locations on both Primary Canyon and Canyon B where either replacement LFG wells or additional vertical wells could be installed to improve gas collection, and installed those LFG wells in summer 2009. During March 2010, additional LFG wells and replacement LFG wells were installed in Primary Canyon and the Main Canyon area to further control subsurface LFG migration.

During the late third and fourth quarters 2010, construction activities across both the Primary Canyon and Canyon B areas necessitated temporarily shutting down numerous LFG wells, which may have resulted in the observed slight increases in the VOC concentrations at well DW-1 at the end of 2010. The existing LFG wells were returned to production in January 2011. During December 2010 and into January 2011, additional LFG wells were added to both the Main Canyon area and the Primary Canyon (near well DW-16).

Historically, the LFG collection system appears to be effective at reducing VOC concentrations in groundwater at wells DW-1 and DW-3, so no further changes to the CAP are recommended at this time.

Summary

Results of the 2013 monitoring periods are summarized below.

- Groundwater flow directions are generally south beneath the Main Canyon area, Primary Canyon, and Canyon C as described in Chapter 5.0, Geology and Hydrogeology. At Canyon B, groundwater appears to flow eastward down the canyon. The groundwater gradients and velocity are consistent with past results.
- For the DMP, no VOCs were detected, and the inorganic monitoring parameters statistically analyzed do not indicate landfill impacts to groundwater.
- For the EMP, VOCs continue to be present at trace to low concentrations at well DW-16. The VOC concentrations at DW-16 have increased since January 2004, but remain at low levels. At well DW-20, only 1,1-DCA was present in trace quantities during the first and fourth quarters. The inorganic monitoring parameters that were statistically analyzed did not indicate landfill impacts.
- For the CAP, LFG control measures continue to operate at Primary Canyon, Canyon B, and Main Canyon; replacement LFG wells were installed in December 2010 and January 2011 to improve LFG collection. At well DW-1, no VOCs were detected in the first through third quarters, and 1,1-DCA and PCE were present in trace to low concentrations in the fourth quarter sample. In samples from DW-3, CFC 12 was the only VOC detected, and concentrations remained within historical ranges. No changes to the corrective action measures are recommended.

In addition, the statistical and nonstatistical analyses of the 5-year COC results from October 2011 resulted in no indication of a landfill release.

7.6.1.5 Proposed Groundwater Monitoring System

The monitoring wells and piezometers proposed for the future groundwater monitoring system for the Proposed Project are shown in Figure 5-13 and listed in Table 5-1. The maximum groundwater elevation contour map for the water table and the planned cell excavation plan for the Proposed Project are shown in Figure 5-19. Table 5-1 notes the Disposal Units (landfills) monitored and whether the monitoring points are located upgradient or downgradient of the respective Disposal Units.

The POC for each landfill area is a vertical surface located in the hydraulically downgradient limit of the waste management unit that extends through the uppermost water-bearing zone underlying the unit. The proposed downgradient monitoring points are located as close as possible to the POC, given the operational and physical constraints of positioning monitoring wells where they will remain accessible. These proposed Saugus and Pico Formation wells will be completed in the uppermost water-bearing zone as determined during exploratory drilling operations.

The proposed monitoring system consists of 19 groundwater points (DW-1, DW-7, DW-8, DW-14 to DW-18, DW-23, DW-26, DW-28 to DW-35, and PZ-4) and 3 vadose zone points (SW-1, VP-2 [GP-29], and VP-3 [DW-30]) (Table 5-1 and Figure 5-13), and an additional 3 groundwater points to be monitored for groundwater levels only (DW-9, DW-21, and DW-27). Thirteen existing monitoring points will be destroyed (LP-1, GP-9, VP-1 [GP-10], DW-3, DW-6, DW-12, DW-20, DW-24, DW-25, PZ-3, PZ-5, PZ-6, and PZ-7), either because they are within the proposed landfill development area, or because they no longer provide useful monitoring data (vadose zone lysimeter LP-1).

Main Canyon: The proposed extension of the Main Canyon footprint into South Main Canyon requires one new downgradient groundwater monitoring well, DW-29. Well DW-29 is centrally located in the Main Canyon drainage to monitor downgradient from the lowest elevations in the landfill floor, and is also downgradient from the POC on the west slope. Additional groundwater monitoring along the Main Canyon POC is provided by wells DW-15 and DW-16, and monitoring downgradient from the POC is provided at wells DW-1 and DW-18. Upgradient groundwater monitoring will be conducted at Pico Formation wells DW-8 and DW-28, and at Saugus well DW-17. On the west ridge, Saugus well DW-9 is not in the proposed monitoring system, but should be retained for groundwater level measurements only. Proposed vadose points consist of downgradient vadose well SW-1 and upgradient VP-2 (GP-29).

North and East Canyons: The POC for the proposed North and East Canyons footprint will require downgradient monitoring in the Pico Formation along the north (well DW-34), and in the Saugus Formation along the northeast (wells DW-23 and DW-33), east (DW-26 and DW-32), and southeast (wells DW-30 and DW-31). Upgradient monitoring will be provided by Pico Formation well DW-28. Monitoring point DW-27 should be used for groundwater level measurements only, and is not part of the proposed groundwater monitoring program. Wells DW-24 and DW-25, and piezometers PZ-3, PZ-5, PZ-6, and PZ-7 will be destroyed as landfill development proceeds; but water levels should be monitored until their destruction. Vadose points consist of downgradient VP-3 (DW-30) and upgradient VP-2 (GP-29).

Primary Canyon: The Primary Canyon POC is unchanged, and the proposed points include existing monitoring points DW-1, DW-7, and DW-16 through DW-18. Because well DW-12 will be destroyed by the entrance road development, a replacement well DW-35 will be installed. Well DW-21 should be retained for groundwater level measurements only, but could be used in the event that a new landfill release impacts nearby wells. Well DW-21 is a deep pair to well DW-18, and their historical water quality results have been similar since installation of well DW-21 in 1999. The vadose zone point will be well SW-1.

Canyon B: The Canyon B POC also is unchanged, and the proposed groundwater monitoring system includes existing points DW-14 and PZ-4. Because well DW-3 and vadose zone point GP-9 will be destroyed by the landfill development, replacement downgradient points DW-30/VP-3 and DW-31 will be installed. The shallow vadose point VP-3 in the boring for well DW-30 replaces vadose zone point GP-9. Inactive well DW-6 will be within the landfill development area and should be destroyed.

The well depth and design for each of the additional monitoring points will meet CCR Title 27 regulatory requirements, and be determined based on geologic and groundwater conditions encountered during drilling. In general, the groundwater wells will target the uppermost water-bearing zone, and will be completed with a relatively short screen intended to sample approximately 20 feet of saturated rock. As required by CCR Title 27, a detailed Well Installation Work Plan will be submitted for RWQCB review and approval prior to installation of the proposed monitoring points.

7.6.1.6 Proposed Perimeter Landfill Gas Monitoring System

To meet the perimeter LFG monitoring requirements of the South Coast Air Quality Management District (SCAQMD) Rule 1150.1 and CCR Title 27, the proposed perimeter LFG monitoring program will consist of a total of 27 multi-level gas monitoring probes (Figure 7-5 and Table 7-3). The proposed probes are spaced less than 1,000 feet apart around the proposed landfill limits. The expanded landfill footprint will require installation of nine additional LFG monitoring probes (GP-27 through GP-35) on the north and east sides of the property. Nine existing monitoring probes (GP-A, GP-B, GP-9, GP-10, GP-11, GP-12, GP-24, GP-25, and W-2) will be destroyed as the expansion progresses.

The number and depth of gas probes at each of the additional monitoring points will meet SCAQMD Rule 1150.1 and CCR Title 27 regulatory requirements, and will be determined based on geologic conditions encountered during drilling, maximum depth of refuse, and local groundwater elevations. As required by CCR Title 27, an LFG Monitoring Plan that provides justification for the monitoring point locations, depths, and construction methods will be submitted for agency review and approval prior to installation of these points.

7.6.1.7 Separation between Groundwater and Waste

The Proposed Project changes the currently permitted landfill footprint in two areas: (1) the North and East Canyon Excavation Area northeast of, and contiguous with, the Main Canyon landfill; and (2) the South Main Canyon Excavation Area, which is south of and adjoining the Main Canyon landfill. The cell excavation plan illustrates the proposed grading (with red elevation contour lines) in these areas (Figure 5-19).

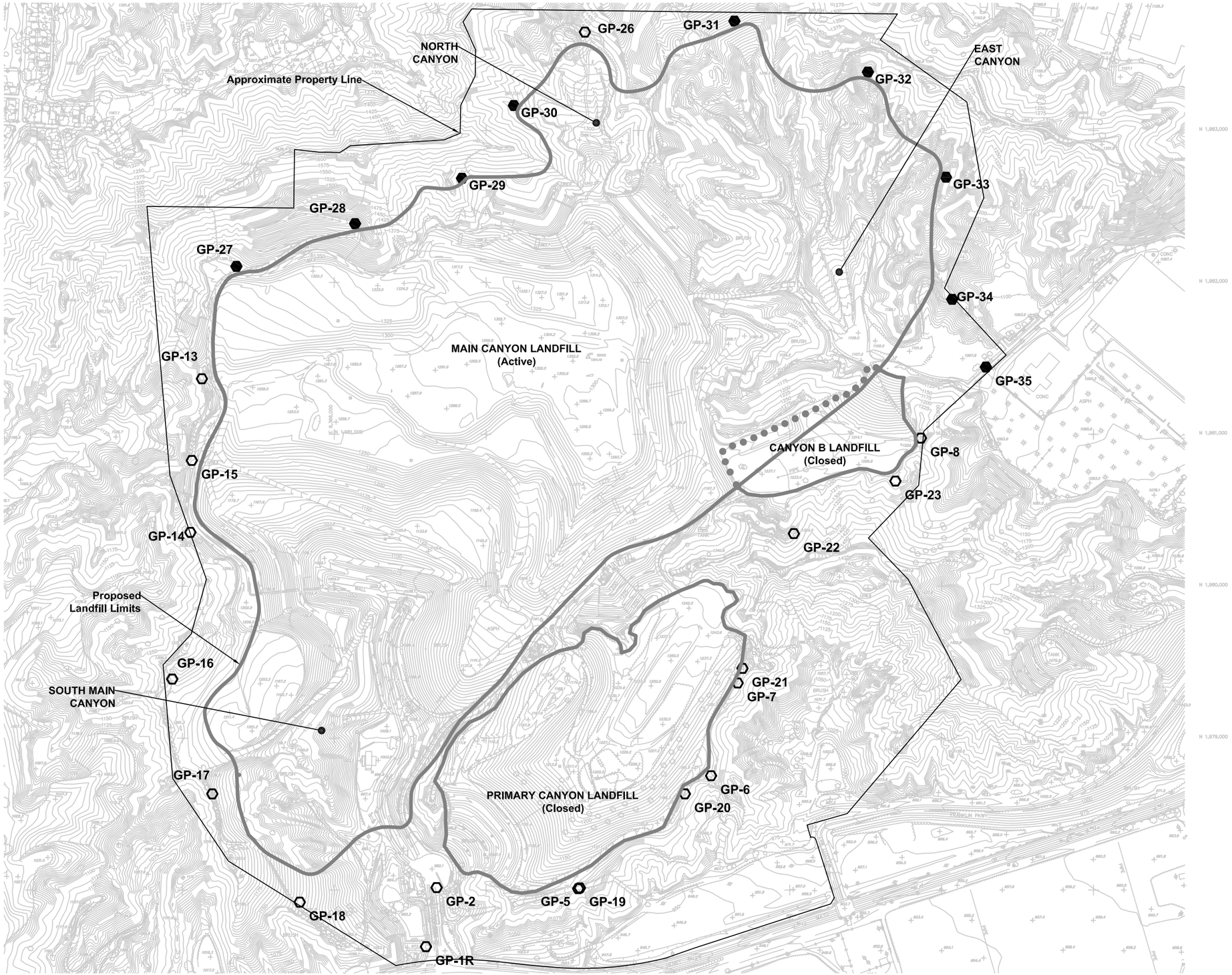
The Proposed Project cell excavation plan (red elevation contours) is also presented in Figure 5-19 to illustrate the waste-groundwater separation in both the North/East Canyons and South Main Canyon landfill areas, where the elevation difference between the red and blue contour lines represents the approximate minimum waste-groundwater separation. As discussed in Chapter 5.0, because the bottom of refuse will be slightly higher than the excavation elevations, depending on the approved liner system design, the waste-groundwater separation calculated from these contour lines represents a minimum. North, East, and South Canyons will meet the minimum of 5 feet above the highest anticipated elevation of underlying groundwater criteria.

7.7 Potential Impacts

7.7.1 Standards of Significance

Potential impacts of the Proposed Project resulting from water quality considerations are assessed below. Section 15065 of the *California Environmental Quality Act (CEQA) Guidelines* indicates that a lead agency shall find that a project may have a significant effect on the environment if the project has the potential to substantially degrade the quality of an environment. Specific to the water quality aspects of the Proposed Project, the project will have a significant effect if it will:

- Violate any surface water quality standards or WDRs
- Violate any groundwater quality standards or WDRs
- Contaminate public water supply
- Otherwise substantially degrade water quality



EXPLANATION

- Landfill Gas Monitoring Probe (existing)
- Landfill Gas Monitoring Probe (future)

Note:
Proposed Landfill Limits from Golder Associates November, 2011 Excavation Plan

N

0 300 600
Feet

FIGURE 7-5
Perimeter Landfill Gas Monitoring Systems
Chiquita Canyon Landfill
Master Plan Revision

Source: RTF&A, 2012.

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TABLE 7-3
Master Plan Revision Landfill Gas Monitoring System
Chiquita Canyon Landfill

	Monitoring Programs			Monitoring Programs	
Existing Gas Probes	**Title 27**	**Rule 1150.1**	**Future Gas Probes**	**Title 27**	**Rule 1150.1**
GP-1R	No	Yes	GP-27	Yes	yes
GP-2	Yes	Yes	GP-28	Yes	yes
GP-5	No	Yes	GP-29	Yes	yes
GP-6	No	Yes	GP-30	Yes	yes
GP-7	No	Yes	GP-31	Yes	yes
GP-8	Yes	Yes	GP-32	Yes	yes
GP-13	Yes	Yes	GP-33	Yes	yes
GP-14	Yes	Yes	GP-34	Yes	yes
GP-15	Yes	No	GP-35	Yes	yes
GP-16	Yes	No			
GP-17	Yes	No			
GP-18	Yes	No			
GP-19	Yes	No			
GP-20	Yes	No			
GP-21	Yes	No			
GP-22	Yes	No			
GP-23	Yes	No			
GP-26	Yes	Yes			

Note: The following existing gas probes will be destroyed: GP-A, GP-B, GP-9, GP-10, GP-11, GP-12, GP-24, GP-25, and W-2.

7.7.1.1 Proposed Project

The Proposed Project has the potential to (1) violate surface water quality standards or WDRs, (2) violate groundwater quality standards or WDRs, (3) contaminate public water supply, and (4) otherwise substantially degrade water quality. However, these impacts would be less than significant because the Proposed Project would be in compliance with NPDES requirements, CCR Title 27 requirements, and Orders and WDRs issued by RWQCB as further described below.

The Proposed Project will include preparing and implementing a SWPPP and SWMP in accordance with a General Permit issued under SWRCB Order No. 97-03-DWQ, in accordance with NPDES requirements, and in accordance with RWQCB Order No. R4-2011-0052.

The Proposed Project will meet or incorporate the following siting and design features in accordance with Title 27, Chapter 3, Subchapter 2:

- Minimum 5-foot separation between waste above the highest anticipated elevation of underlying groundwater (Section 20240[c])
- Liner system with hydraulic conductivity of $1x10^{-6}$ centimeters per second or less to ensure protection of the quality of groundwater and surface water (Section 20260)
- Design and construction of liner system to contain the fluid, including LFG, waste, and leachate (Section 20330)
- Leachate collection and removal systems (Section 20340)
- Precipitation and drainage control structures designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping (Section 20365)

Additionally, the Proposed Project will comply with the Los Angeles County Low Impact Development Ordinance. The Proposed Project will implement the required water quality monitoring and response programs for detecting, characterizing, and responding to releases to groundwater, surface water, or the unsaturated zone in accordance with CCR Title 27, Chapter 3, Subchapter 3. RWQCB will specify, in facility-specific WDRs, the type or types of monitoring programs required and the specific elements of each monitoring and response program. These type(s) of monitoring programs will include a DMP (Section 20420) and, if necessary, an EMP (Section 20425), and/or CAP (Section 20430) to ensure no impairment of beneficial use of surface water or groundwater beneath or adjacent to the landfill. The specific elements of each program will include the following:

- Water Standard (Section 20390)
- COCs (Section 20395)
- Concentration Limits (Section 20400)
- Monitoring Points and POC (Section 20405)
- Compliance Period (Section 20410)
- General Water Quality Monitoring and System Requirements (Section 20415)

The proposed groundwater monitoring system for the Proposed Project meets these requirements.

7.8 Mitigation Measures

The Proposed Project will not result in significant impacts to surface water and groundwater, and no mitigation measures would be required.

7.9 Significance After Mitigation

The Proposed Project would result in less-than-significant impacts without mitigation.

7.10 Cumulative Impacts

Urbanization of previously undisturbed land has the potential to cause cumulative degradation of surface water quality via siltation and introduction of urban contaminants from household and industrial products, automobiles, and fertilizers. Implementation of design features described in this Draft Environmental Impact Report, as well as required implementation of best management practices for stormwater runoff at each specific related project, would mitigate potential cumulative impacts to below a level of significance.

Planned or approved development in the project area is residential, commercial, or industrial park in character; therefore, development of vacant land from other related projects is not expected to affect groundwater quality since these projects are not expected to expose groundwater resources to contaminants. While the potential exists for groundwater contamination due to the nature of landfilling, design features proposed for the Proposed Project would all but eliminate the project's potential impact on groundwater quality. Therefore, cumulative projects are not expected to significantly impact the quality of groundwater.

CHAPTER 8.0

Biological Resources

8.1 Introduction

This chapter evaluates the potential impacts to biological resources related to the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project), which is located on the north side of State Route 126 (SR-126), west of Interstate 5 (I-5) in the Santa Clarita Valley area of Los Angeles County. A vicinity map showing the location of CCL is shown in Figure 1-1.

8.2 Methodology

8.2.1 Background Literature/Database Review

A review of relevant biological databases for biological resources at CCL was conducted. This included a review of the California Natural Diversity Database (CNDDB) and Special Animals List managed by the California Department of Fish and Wildlife (CDFW) (CDFW, 2011; CDFW, 2012a); proposed or final critical habitat for species listed as "threatened" or "endangered" designated by the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) under the Federal Endangered Species Act (FESA); Significant Ecological Areas (SEA) and Ecological Transition Areas (ETA) as determined by the County of Los Angeles; Significant Natural Areas (SNA) as determined by CDFW; Special Vascular Plants, Bryophytes, and Lichens List (CDFW, 2012b), and the Calflora Database, hosted by the University of California Berkeley Digital Library Project (Calflora, 2012).

Existing environmental documents, planning or technical reports, government publications, and other published materials with information relevant to biological resources in the region or the site were collected, reviewed, and summarized. A full list of documents that were reviewed for this chapter is provided in Chapter 21.0, References and Bibliography.

8.2.2 Agency Coordination

Contact was initiated with CDFW, the Los Angeles County Regional Planning Department, Los Angeles Regional Water Quality Control Board (RWQCB), and the United States Army Corps of Engineers (USACE) via the Notice of Preparation (NOP) that was distributed on November 21, 2011, and received by the State Clearing House on November 28, 2011 (see Appendix A).

8.2.3 Reconnaissance Surveys

Reconnaissance-level biological surveys were conducted at CCL. Vegetation communities and habitat types at CCL were mapped on aerial photographs and verified with field visits. Vegetation communities were characterized, and wildlife usage of these communities was noted. Site visits were conducted by CH2M HILL biologists between 2002 and 2013. Additionally, vegetation monitoring at CCL was conducted by CH2M HILL biologists between 2004 and 2012. A comprehensive list of survey dates is provided in Appendix E1.

Additional information was mapped at CCL, including (1) general locations of waters of the United States as defined by USACE as containing waters in a 2-year flood frequency; (2) CDFW stream jurisdictional areas determined as having a defined "bed and bank"; (3) special-habitat features important for sensitive species; and (4) identification of potential wildlife movement or migratory corridors. Along with preliminary mapping, site habitat was assessed based on suitability to support special-status species.

8.3 Regulatory Setting

8.3.1 Federal Regulations and Standards

The Proposed Project may be subject to the following federal regulations:

Federal Endangered Species Act (FESA). The FESA, including coordination requirements of Sections 7 and 10 and Habitat Conservation Plan (HCP) requirements of Section 9 (16 *United States Code* [USC] §§1531 et seq.; 50 *Code of Federal Regulations* (CFR) Part 402). Section 9 of the FESA prohibits the "take" of species federally listed as threatened or endangered. "Take" is further defined to include any harm or harassment, including significant habitat modification or degradation that could potentially kill or injure wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Take incidental to otherwise lawful activities can be authorized under Section 7 of the FESA, where a federal nexus or agency is involved. Section 10 of the FESA provides for project proponents of non-federal activities to apply for take incidental to otherwise lawful activities; this generally includes the development of an HCP.

Migratory Bird Treaty Act (MBTA; 16 USC 703-712; 50 CFR 10). The federal MBTA prohibits the "take" of migratory birds, unless permitted. This regulation can constrain construction activities that have the potential to affect nesting birds either through vegetation removal and land clearing, or through other construction- or operation-related disturbance.

Clean Water Act (CWA). Sections 401 and 404 of the CWA (33 USC Section 1344). Activities that have the potential to discharge fill materials into waters of the United States including wetlands are regulated by the United States Environmental Protection Agency (EPA) under Section 404 of the CWA. USACE administers Section 404 of the CWA. Fill activities may be permitted by a Nationwide or Individual Permit. The Nationwide Permit Program involves certain activities that have been preauthorized by USACE. Individual Permit applications are more involved, and generally take up to 6 months for permit issuance. Typically, USACE requires mitigation for temporary and permanent impacts to waters and wetlands. Mitigation is required to be consistent with the revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams, and other waters, per "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule" (USACE, EPA Federal Register, April 10, 2008).

Projects requiring a Section 404 permit also require a CWA Section 401 Water Quality Certification, issued by the appropriate RWQCB.

Under the provisions of the CWA, USACE has jurisdictional authority over waters of the United States, which are defined in CFR as waters having current or historical use for interstate or foreign commerce; all interstate waters including interstate wetlands; all other intrastate waters such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; tributaries to any of the aforementioned waters; territorial seas; and wetlands adjacent to waters (other than waters that are themselves wetlands) named above (33 CFR 328.3).

Traditionally, USACE has interpreted CWA regulations to define "waters of the United States" within non-tidal waters, in the absence of adjacent wetlands, as defined by the Ordinary High Water Mark (OHWM). In 33 CFR 328.3, the OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter and debris." Generally, USACE has considered the OHWM to be the elevation to which water flows at a 2-year frequency (i.e., 50 years out of 100 years), and has asserted jurisdiction over tributaries to navigable waters demonstrating these characteristics, including ephemeral washes.

USACE has published *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE, 2008a; also see USACE, 2006). This field methodology has been developed by USACE for delineating OHWM in the arid west region of the United States. It presents methodology that recommends the consideration that OHWM indicators could be associated with 5-year

events within the arid west, as opposed to 2-year events in other, more temperate climates. The methodology also puts a greater emphasis on changes in vegetation and sediment size in identifying jurisdictional limits.

Wetlands are defined in Section 404(b)(1) as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration [wetland hydrology] sufficient to support, and that under normal circumstances do support, a prevalence of vegetation [hydrophytic vegetation] typically adapted for life in saturated soil conditions [hydric soils]" (40 CFR 230.3; 33 CFR 328.3). The *Corps of Engineers Wetlands Delineation Manual* (USACE, 1987), supported by the *Final Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008b), requires an examination for the presence of indicators of three mandatory diagnostic characteristics. These characteristics or wetland parameters include hydrology, hydrophytic vegetation, and hydric soils. Except in limited instances, these documents require that evidence of a minimum of one positive indicator from each of the three mandatory wetland parameters be present for an area to be called a wetland under Section 404 jurisdiction.

Recent court cases have challenged EPA and USACE's traditional interpretation of the CWA regulations. These decisions have had the overall result of calling into question the jurisdiction of seasonal, ephemeral washes, which may flow into navigable waters, but are not themselves navigable waters. Court decisions that have directly affected the interpretation of federal jurisdiction have included:

Solid Waste Agency of Northern Cook County (SWANCC) v. USACE, 531 U.S. 159 (2001): In this decision, the Supreme Court upheld a decision that USACE could not regulate isolated, intrastate waters that do not bear a "significant nexus" to traditional navigable waters (at least in most cases).

Rapanos v. United States and Carabell v. United States (Rapanos) 547 U.S., 126 S. Ct. 2208 (2006). In 2006, the Supreme Court addressed the jurisdictional scope of Section 404 of the CWA, specifically the term "the waters of the United States," in *Rapanos v. United States* and in *Carabell v. United States.* The justices agreed that the CWA jurisdiction exists over all traditional navigable waters (TNW) and over all wetland adjacent to TNWs.

On June 5, 2007, EPA issued guidance for the Supreme Court decision in the Rapanos/Carabell court case. This guidance was reissued on December 2, 2008 (USACE, 2008c), with some minor changes, including clarification on how to determine the reach of TNWs, clarification on the concept of relevant reach, and clarification on the term "adjacent wetlands." In summary, these documents provide guidance on how EPA will assert jurisdiction over (1) TNWs, (2) wetlands adjacent to TNWs, (3) non-navigable tributaries of TNWs that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (typically 3 months), and (4) wetlands that directly abut such tributaries.

Jurisdiction over the following waters will be based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: (1) non-navigable tributaries that are not relatively permanent, (2) wetlands adjacent to non-navigable tributaries that are not relatively permanent, and (3) wetlands that are adjacent to, but do not directly abut, a relatively permanent non-navigable tributary (USACE, 2008c).

USACE indicated that it will generally not assert jurisdiction over the following features: (1) swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow), and (2) ditches (including roadside ditches) excavated wholly in, draining only uplands, and not carrying a relatively permanent flow of water (USACE, 2008c).

USACE issued Regulatory Guidance Letter (RGL) No. 08-02 on June 26, 2008, which provided clarification on conducting jurisdictional determinations (USACE, 2008d). Specific requirements resulting from this guidance include the following: (1) use of the Approved Jurisdictional Determination Form to provide information to USACE to make a significant nexus determination, and (2) use of the Preliminary Jurisdictional Process and Approved Jurisdictional Process to expedite applications where there is clear evidence of jurisdictional waters and/or wetlands (Preliminary Jurisdictional Process) or where there is not clear evidence and the project must go through the significant nexus test (Approved Jurisdictional Process).

EPA issued the *Draft Guidance on Identifying Waters Protected by the Clean Water Act* on June 27, 2011 (EPA, 2011). This document was intended to revise and clarify the earlier guidance documents. The comment

period extended to July 31, 2011. EPA received over one-quarter million comments on this document. To date, the Draft Guidance has not been finalized, and no date for finalization has been provided. This document is somewhat consistent with earlier guidance documents; although some changes are proposed. It does not incorporate the "Approved" or "Preliminary" jurisdictional process; however, this process may continue until RGL 08-02 is rescinded or reissued. To summarize, under the Draft Guidance (EPA, 2011):

1. The following waters would be protected by the CWA:
    a. Traditional navigable waters;
    b. Interstate waters;
    c. Wetlands adjacent to either traditional navigable waters or interstate waters;
    d. Non-navigable tributaries to traditional navigable waters that are relatively permanent, meaning they contain water at least seasonally; and
    e. Wetlands that directly abut relatively permanent waters.
2. The following waters would be protected by the CWA if a fact-specific analysis determines they have a "significant nexus" to a traditional navigable water or interstate water:
    a. Tributaries to traditional navigable waters or interstate waters;
    b. Wetlands adjacent to jurisdictional tributaries to traditional navigable waters or interstate waters; and
    c. Waters that fall under the "other waters" category of the regulations. The Draft Guidance divides these waters into two categories, those that are physically proximate to other jurisdictional waters and those that are not, and discusses how each category should be evaluated.
3. Aquatic areas that would generally not be protected by the CWA, among others, would include wet areas that are not tributaries or open waters and are not wetlands; waters that lack a "significant nexus"; artificially irrigated areas that would revert to upland should irrigation cease; artificial lakes or ponds created by excavating and/or diking dry land; water filled depressions created incidental to construction activity; erosional features (gullies and rills) and swales and ditches that are not tributaries or wetlands; and ornamental bodies of water.

In the absence of direct regulatory guidance from USACE on jurisdictional status at CCL, determining CWA jurisdiction at CCL can be conservatively based on whether ephemeral streams on CCL meet the "significant nexus" test. The evaluation should consider the following, relative to the nearest TNW, presumed to be the Santa Clara River:

- Presence and/or proximity of navigable waters to the site, and a significant connection to or relationship with navigable waters, including hydrologic/physical connection, biological/ecological connection, or chemical connection.
- Physical connection should evaluate frequency, volume, regularity of the connection (i.e., is the flow insubstantial, speculative, or minor?); does the water perform a flood control function for the navigable water; would pollutants (including sediment) actually (as opposed to speculatively) reach the navigable water?

Ecological connection should evaluate whether the water ecosystem supports populations that are integral or indistinguishable from the navigable water.

8.3.2 State Regulations and Standards

The Proposed Project may be subject to the following state regulations:

California Endangered Species Act (CESA; California Fish and Wildlife Code §§2050 et seq.). Section 2050 of the California Fish and Wildlife Code prohibits any activities that would jeopardize or take a species listed as threatened or endangered within the state. Projects that have the potential to impact species listed as

threatened or endangered by the state might require an Incidental Take Permit from CDFW under Section 2081 of the California Fish and Wildlife Code.

California Fully Protected Wildlife Species Provisions (California Fish and Wildlife Code §§3511, 4700, 5050, and 5515). These provisions prohibit the taking of fully protected birds, mammals, amphibians, and fish. CDFW might authorize the project, with conditions, after reviewing the project impacts.

Birds of Prey Protection Provision (California Fish and Wildlife Code §3503.5). This provision prohibits the taking of birds of prey, including any birds of the order Falconiformes or Strigiformes, and includes the nests or eggs of such birds.

Migratory Bird Provision (California Fish and Wildlife Code §3513). This provision prohibits any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

Fish and Wildlife Protection and Conservation – Streambed Alteration Agreements (California Fish and Wildlife Code §1600). Section 1600 of the California Fish and Wildlife Code regulates the alteration of the bed, bank, or channel of a stream, river, or lake, including dry washes subject to intermittent flow. Generally, CDFW asserts jurisdiction up to the top of significant bank cuts, or to the outside of any riparian vegetation associated with a water course. Activities that have the potential to affect jurisdictional areas can be authorized through issuance of a Streambed Alteration Agreement (SAA). The SAA specifies conditions and mitigation measures that would minimize impacts to riparian resources from proposed actions.

8.3.3 Local Regulations and Standards

The Proposed Project may be subject to the following ordinance:

County of Los Angeles Oak Tree Ordinance (Los Angeles County Code, Title 22, Section 56, Part 16). The oak tree permit has been established by the County of Los Angeles to recognize oak trees as significant historical, aesthetic, and ecological resources and to create favorable conditions for the preservation and propagation of this unique, threatened plant heritage, particularly those trees which may be classified as heritage oak trees, for the benefit of current and future residents within the county (Los Angeles County Code, 2012). According to this ordinance:

> "Section 22.56.2070, a person shall not cut, destroy, remove, relocate, inflict damage or encroach into a protected zone of any tree of the oak genus which is (a) 25 inches or more in circumference (eight inches in diameter) as measured four and one-half feet above mean natural grade; in the case of an oak with more than one trunk, whose combined circumference of any two trunks is at least 38 inches (12 inches in diameter) as measured four and one half feet above mean natural grade, on any lot or parcel of land within the unincorporated area of Los Angeles County, or (b) any tree that has been provided as a replacement tree, pursuant to Section 22.56.2180, on any lot or parcel of land within the unincorporated area of Los Angeles County, unless an oak tree permit is first obtained as provided by this Part 16."

A heritage oak tree is defined as any oak tree at least 36 inches in diameter measured four and one-half feet above the natural grade. In addition, any oak tree that is culturally or historically significant to the community, even if it is less than 36 inches in diameter, is classified as a heritage oak tree (Los Angeles County Code, Title 22, Section 56, Part 16, 2011).

8.3.4 Special Land Designations

8.3.4.1 Federal Critical Habitat

Section 3(5)(A) of the FESA requires USFWS or NMFS to establish critical habitat for federally listed species. Critical habitat represents areas within the geographical area occupied by the species "on which are found those physical or biological features (i) essential to the conservation of the species and (ii) which may require special management consideration or protection; and (iii) specific areas outside the geographical area occupied by the species at the time it is listed …upon a determination …that such areas are essential for the

conservation of the species." Federal projects (or projects with a significant federal nexus) must be evaluated for significant effects on designated critical habitat. Generally private projects or landholdings are exempt from the requirements of critical habitat.

CCL is not located within any critical habitat boundary. The species for which critical habitat has been designated in the general project area, along the Santa Clara River, include (see Figure 8-1):

- Arroyo toad (*Anaxyrus californicus, Bufo californicus*): Along the upper reach of the Santa Clara River adjacent to CCL (USFWS, 2011a)
- Least Bell's vireo (*Vireo pusillus pusillus*): Along the upper reach of the Santa Clara River adjacent to CCL (USFWS, 1994)
- Southern steelhead (*Oncorhynchus mykiss irideus*): Along the lower reaches of the Santa Clara River upstream as far as Piru Creek, including Piru Creek (National Oceanic and Atmospheric Administration, 2005)

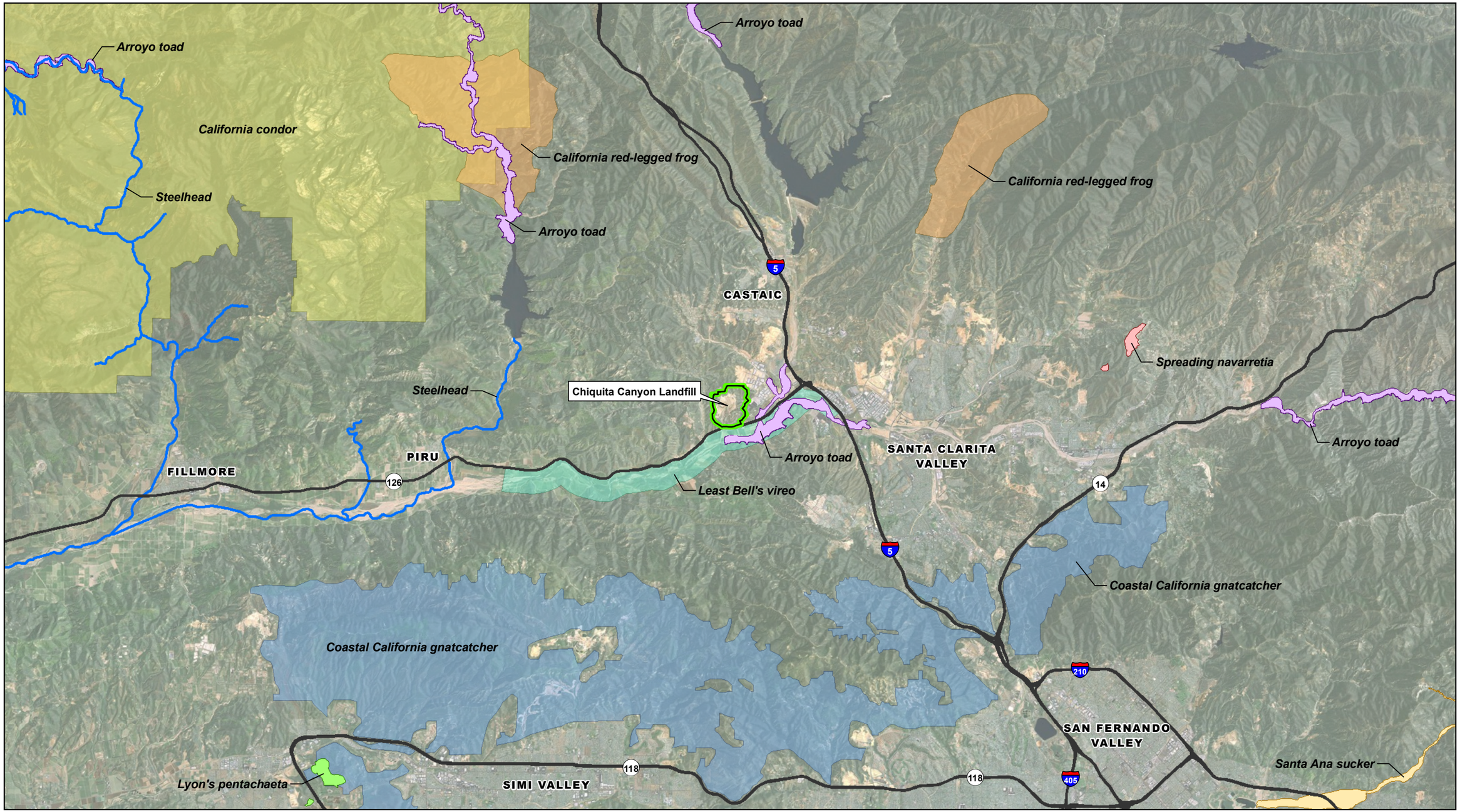
Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) critical habitat was draft designated in 1980 by USFWS in the area; however, the draft designation was never finalized (USFWS, 1980). Other critical habitat designations for wildlife species within the region (Figure 8-1) include California condor (*Gymnogyps californianus*), California red-legged frog (*Rana draytonii*), coastal California gnatcatcher (*Polioptila californica californicus*), and Santa Ana sucker (*Catostomus santaanae*) as well as plant species including Lyon's pentachaeta (*Pentachaeta lyonii*) and spreading navarretia (*Navarretia fossalis*). However, these critical habitat designations are not in the immediate vicinity of CCL.

8.3.4.2 Significant Ecological Areas

In 1970, Los Angeles County prepared an Environmental Development Guide, which contains an Open Space Conceptual Plan map. The Open Space Conceptual Plan depicts areas of conservation and safety significance, and these areas closely resemble the proposed SEA and ETA map (Los Angeles County Department of Regional Planning [LADRP], 2009); ETAs are a subset of SEAs. SEAs were established in 1976 by Los Angeles County to designate areas with sensitive environmental conditions and/or resources (LADRP, 2009). In 2002, the proposed SEA map was released for public review as part of an Amendment to the County's General Plan (LADRP, 2009). The SEAs in the vicinity of CCL were adopted with the Santa Clarita Valley Plan in Oct 2012. Uses normally allowed in the corresponding land use classification would continue to be permitted unless a finding is made that the Proposed Project would have an adverse effect on the SEA (LADRP, 1990). Boundaries for the SEAs are general in nature and broadly outline the biotic resources of concern. The Santa Clara River SEA is closest to CCL; however, CCL is not located within the Santa Clara River SEA boundaries (Figure 8-2). Therefore, no review by the SEATAC is required.

8.3.4.3 Santa Clara River Enhancement and Management Plan

The Santa Clara River Enhancement and Management Plan (SCREMP) was developed by the Ventura County Watershed Protection District (VCWPD) and the Los Angeles County Department of Public Works (LACDPW). It identifies a number of riverwide and reach-specific recommendations within the 500-year floodplain. Reach 11 of the Santa Clara River, which includes Newhall Land and Farming Company (NLF) project areas is south of the CCL site and across SR-126 (see Figure 2.1-1 in the SCREMP; VCWPD and LACDPW, 2005). Reach 11 recommendations identify that the activities within this reach shall comply with the CWA Section 404 permit and Section 1603 SAA pursuant to the Natural River Management Plan (NRMP) developed for NLF projects. This NRMP addresses cumulative impacts to Santa Clara River and San Francisquito Creek drainage for the next 20 years and identifies standard mitigation measures for all work that could occur within these drainages.



LEGEND

- Major Road
- Limit of Disturbance
- Project Boundary
- Steelhead
- Arroyo toad
- California condor
- California red-legged frog
- Coastal California gnatcatcher
- Least Bell's vireo
- Lyon's pentachaeta
- Santa Ana sucker
- Spreading navarretia

Sources: ESRI (2010); Final Critical Habitat boundaries obtained from U.S. Fish and Wildlife Service for the following species: Arroyo toad (2011), California condor (1977), California red-legged frog (2010), Coastal California gnatcatcher (2007), Least Bell's vireo (1994), Lyon's pentachaeta (2006), Santa Ana sucker (2010), Spreading navarretia (2010), and Steelhead (2005).
Aerial Imagery Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community (2010)

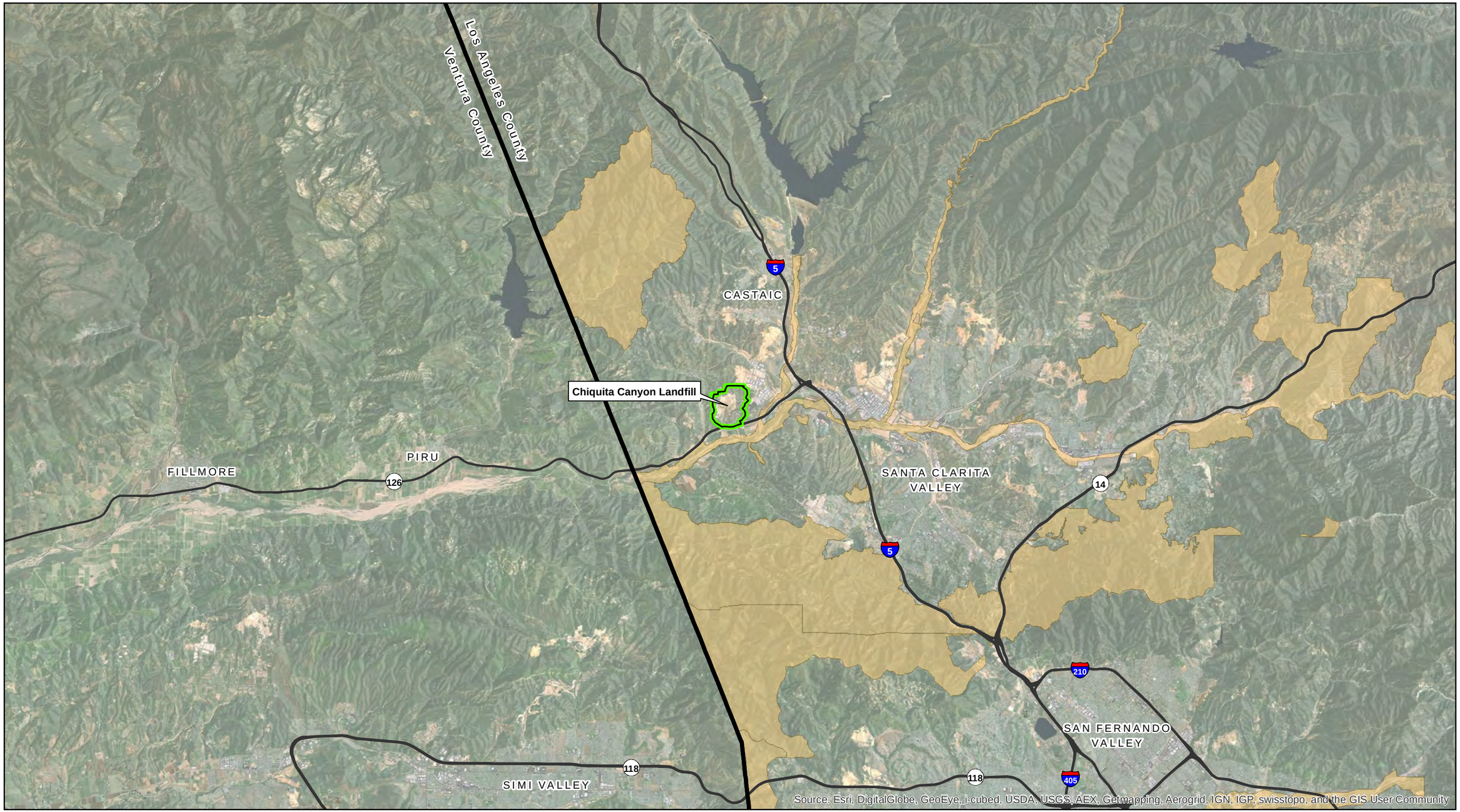
N

0 1.375 2.75
Miles

FIGURE 8-1
Critical Habitat
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

SCO \\galt\proj\chiquita\MapFiles\2012\DEIR\Bio_CriticalHabitat.mxd



LEGEND

- Major Road
- Limit of Disturbance
- Project Boundary
- Significant Ecological Area (SEA)

N

0 1.375 2.75
Miles

FIGURE 8-2
Los Angeles County Significant Ecological Areas
Chiquita Canyon Landfill
Master Plan Revision

Sources: Los Angeles County Department of Regional Planning, ESRI

SCO \\galt\proj\chiquita\MapFiles\2012\DEIR\Bio_SEA_ETA.mxd

CH2MHILL

8.4 Regional Setting

CCL is located in the Santa Clarita Valley, which is generally flat with gently rolling to steep hills that have an average elevation of 1,200 feet to 1,400 feet above mean sea level (msl). CCL is located in the Transverse Ranges, within the western section of the San Gabriel Mountains that forms the northern border of the Santa Clara River Valley (referred to locally as the Santa Clarita River Valley) in the project area. South across the Santa Clara River are the Santa Susana Mountains. To the east are the communities of Valencia and Santa Clarita located in the Santa Clarita River Valley. To the west in Ventura County are the Piru Mountains of the Coast Ranges and the Los Padres National Forest. To the north beyond private holdings in the mountains is the Angeles National Forest.

Topographically, the project site is characterized by steep-sided slopes (approaching 1:1 horizontal:vertical) along two principal canyons. Chiquita Canyon, the main canyon, is generally oriented northeast-southwest, and the eastern canyon, where expansion is proposed, is oriented northwest-southeast. Both canyons open into the Santa Clara River Valley. SR-126 is immediately south of current and proposed new entry to CCL.

The Santa Clarita Valley floor is crossed by several watercourses, the largest being the Santa Clara River, located about a mile south of CCL. The watercourses in this area are usually dry, maintaining surface flow only during the rainy months. However, the Santa Clara River maintains surface flows year-round. Castaic Creek is a major tributary of the Santa Clara River; the confluence of these two drainage courses is located approximately 0.3 mile to the southeast of CCL. . Castaic Creek generally only flows seasonally or in response to large storm events. Within CCL, the major drainages carry surface water towards the Santa Clara River (from the western portion of the landfill) or Castaic Creek (from the eastern portion of the landfill) across the lands of NLF. In the immediate vicinity of CCL, some surface drainage flows to catch basins, where it is channelized into underground culverts. These culverts discharge water into surface drainages that discharge to the NLF lands closest to the Santa Clara River.

Land use patterns in the region reflect a mixture of open space, urban, and rural uses, including commercial and industrial land, agricultural fields, and vacant areas consisting of undeveloped commercial/industrial lots, undeveloped hillsides, or floodplains. Within the immediate vicinity of CCL there are undeveloped hillsides, agricultural land, and commercial/industrial lots. A mail distribution facility, operated by the United States Postal Service, is located adjacent to the eastern edge of the landfill property boundary.

8.5 Project Setting

8.5.1 Land Cover Types, Vegetation Communities, and Associated Wildlife

CCL consists of five major vegetation communities, which include Riversidean sage scrub, southern mixed chaparral, non-native grassland, dry wash, and riparian woodland (Holland, 1986; Sawyer and Keeler-Wolf, 1995). There are three vegetation communities/ecotones derived from these including, non-native grassland with scattered shrubs, dry wash mule fat dominant, and mixed Riversidean sage scrub/non-native grassland. Additional land cover types within the Proposed Project boundary include ruderal revegetated, active landfill, and roads and infrastructure. Land cover types and vegetation communities at CCL are shown in Figure 8-3. Existing land cover types, vegetation communities, and wildlife species observed or commonly associated with these communities at CCL are described below.

8.5.1.1 Active Landfill

Active landfill occurs in four locations within the Proposed Project boundary and does not support wildlife habitat. Some species, including American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), various gulls (*Larus* spp.), and some passerines such as brown-headed cowbird (*Molothrus ater*), Brewer's blackbird (*Euphagus cyanocephalus*), and common starling (*Sturnus vulgaris*), may scavenge in the active landfill, although various control methods used by CCL prevent scavenging.

8.5.1.2 Disturbed

Disturbed habitat represents areas that have been cleared of natural vegetation (e.g., graded). The disturbed areas at CCL are dominated by bare ground with scattered non-native weedy species including various mustards (*Brassica* ssp. and *Hirschfeldia* sp.), bromes (*Bromus* ssp.), and Russian thistle (*Salsola tragus*).

8.5.1.3 Dry Wash and Dry Wash Mule Fat Dominant

The drainages within the site generally flow in a south-southeast direction; they are fed by numerous small tributaries upstream. The natural flow of the major drainages has been permanently interrupted at the perimeter of CCL by concrete weirs and associated catch basins constructed to control and channelize diverted surface flows. Scattered riparian vegetation including Fremont cottonwood (*Populus fremontii*) and mule fat (*Baccharis salicifolia*) has established in catch basins and in channel locations upstream of the basins. Portions of the main drainages further upstream are dominated by scattered riparian vegetation including mule fat and black elderberry (*Sambucus nigra*), with upland vegetation found along the outer edges, including coyote bush (*Baccharis pilularis*), California buckwheat (*Eriogonum fasciculatum*), and Russian thistle.

Common wildlife species associated with this community at CCL include Costa's hummingbird (*Calypte costae*), Anna's hummingbird (*Calypte anna*), lesser goldfinch (*Carduelis psalria*), and phainopepla (*Phainopepla nitens*).

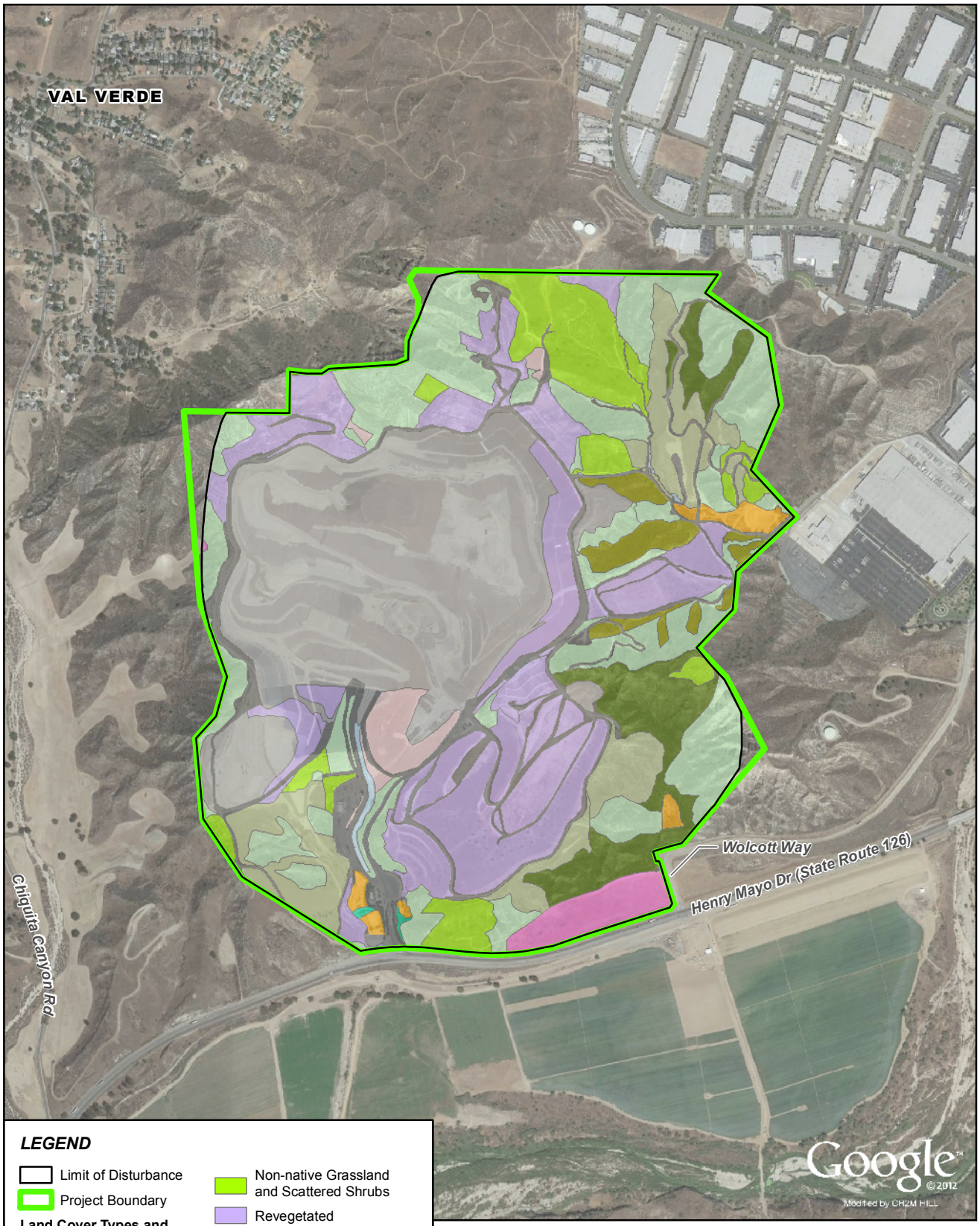
8.5.1.4 Non-Native Grassland and Non-Native Grassland with Scattered Shrubs

Non-native grassland is present throughout CCL, on disturbed slopes affected by landfill activities and previous disturbance. The non-native grassland community at CCL contains dominant species of slender wild oat (*Avena barbata*), barley (*Hordeum* spp.), foxtail chess (*Bromus madritensis* ssp*. rubens*), soft chess (*Bromus hordeaceus*), tocalote (*Centaurea melitensis*), and tree tobacco (*Nicotiana glauca*). Additional areas on CCL contain areas of non-native grassland with scattered shrubs, a variant of the non-native grassland community. This modified vegetation community is generally characterized by 30 to 40 percent coverage of California sagebrush (*Artemisia californica*) and California buckwheat and 60 to 70 percent low herbaceous growth, dominated by various bromes.

Common wildlife species associated with this community at CCL include: Red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), and gopher snake (*Pituophis melanoleucus*).

8.5.1.5 Revegetated

Due to ongoing landfill activities at CCL, many graded areas have been revegetated within and immediately adjacent to the landfill. These areas have been graded and revegetated with scrub habitat, grassland habitat, and riparian habitat. Representative species in the revegetated scrub habitat include brittlebush (*Encelia farinosa*), California sagebrush, California buckwheat, and deerweed (*Acmispon glaber*). The grassland habitat is dominated by non-native species. Representative grasses in the revegetated grassland habitat include various mustards, various bromes, tocalote, and common Mediterranean grass (*Schismus barbatus*). Representative species in the riparian habitat include mule fat. Successful establishment of some of the revegetation areas has occurred (see Table 8-1 later in this chapter). Ongoing revegetation success monitoring is still being conducted and mitigation for the Proposed Project includes development of a Revegetation Plan in consultation with LADRP (as discussed in Section 8.6.3.1).



LEGEND

- Limit of Disturbance
- Project Boundary

Land Cover Types and Vegetation Communities

- Active Landfill
- Disturbed
- Dry Wash
- Dry Wash Mulefat Dominant
- Non-native Grassland
- Non-native Grassland and Scattered Shrubs
- Revegetated
- Riparian Woodland
- Riversidean Sage Scrub
- Riversidean Sage Scrub/Non-native
- Roads and Infrastructure
- Ruderal
- Southern Mixed Chaparral

N

0 0.125 0.25
Miles

FIGURE 8-3
Land Cover Types and Vegetation Communities
Chiquita Canyon Landfill
Master Plan Revision

8.5.1.6 Riparian Woodland

This community is dominated by Fremont's cottonwood *(Populus fremontii)*, Goodding's black willow *(Salix gooddingii)*, blue elderberry *(Sambucus nigra* ssp. *caerulea)*, mule fat *(Baccharis salicifolia)*, and summer mustard *(Hirschfeldia incana)*. A surface water source, seasonal, intermittent, or perennial, is required for this community type. It is only found in scattered locations at CCL; mulefat, cottonwoods, and other riparian vegetation occur adjacent to the southern basin with the *Tamarix ramosissima.* There are mulefat and cottonwoods associated with the eastern detention basin.

Common wildlife species associated with this community at CCL include Costa's hummingbird, Anna's hummingbird, northern oriole (*Icterus galbula*), and lesser goldfinch.

8.5.1.7 Riversidean Sage Scrub

This community is present throughout CCL on slopes with intermediate dryness. Typical species composition for this community includes California sagebrush, California buckwheat, brittlebush, deerweed, California encelia (*Encelia californica*), and several species of sage (*Salvia* spp.) (Holland, 1986). Where this community occurs on westerly, southerly, and easterly slopes, it is dominated by California buckwheat with interspersed California sagebrush, and scattered yucca (*Yucca* sp.). Northerly slopes are primarily dominated by California sagebrush, interspersed with California buckwheat and scattered toyon (*Heteromeles arbutifolia*).

Common wildlife species associated with this community at CCL include American bushtit (*Psaltriparus minimus*), California quail (*Callipepla californica*), Bewick's wren (*Thryomanes bewickii*), California towhee (*Pipilo crissalis*), desert cottontail (*Sylvilagus audubonii*), deer mouse (*Peromyscus maniculatus*), coyote (*Canis latrans*), western fence lizard (*Sceloporus occidentalis*), and side-blotched lizard (*Uta stansburiana*). Several bobcats (*Lynx rufus*) were also observed within this community.

8.5.1.8 Mixed Riversidean Sage Scrub and Non-Native Grassland

This community is present throughout CCL on slopes with intermediate dryness and on potentially disturbed slopes affected by landfill activities and previous cattle grazing. Typical species composition for this community includes California buckwheat, scattered California sagebrush, and slender wild oat, barley, foxtail chess, soft chess, tocalote, and tree tobacco.

Common wildlife species associated with this community at CCL include bushtit, California quail, Bewick's wren, California towhee, red-tailed hawk, western kingbird, desert cottontail, deer mouse, coyote, western fence lizard, side-blotched lizard, and gopher snake.

8.5.1.9 Roads and Infrastructure

Roads and infrastructure occur throughout the Proposed Project area, and roads are modified to accommodate landfill operations. Vegetation associated with this land cover type includes various landscaping plants and non-native weedy species that can be observed along roadsides.

8.5.1.10 Ruderal

Ruderal areas represent disturbed lands along roadsides or in vacant areas that are dominated by non-native weedy species including various mustards, wild radish (*Raphanus sativus*), Russian thistle, tree tobacco, or non-native grasses including wild oat, red brome, or soft chess.

8.5.1.11 Southern Mixed Chaparral

This community is present predominantly on northerly slopes at CCL, although occasionally in situations with other aspects. The community is composed of dense woody vegetation, ranging from 4 to 12 feet in height with little or no understory. Dominant species include scrub oak (*Quercus berberidifolia*), squaw bush (*Rhus aromatica*), toyon, and mountain mahogany (*Cercocarpus betuloides*). The majority of southern mixed-chaparral slopes within the site have equal distributions of squaw bush and toyon with scattered scrub oak and an occasional occurrence of mountain mahogany. Common wildlife species associated with this community at CCL include wrentit (*Chamaea fasciata*), California quail, bushtit, Bewick's wren, western scrub

jay (*Aphelocoma californica*), California thrasher (*Toxostoma redivivum*), spotted towhee (*Pipilo maculatus*), desert cottontail, dusky-footed woodrat (*Neotoma fuscipes*), coyote, western fence lizard, coachwhip (*Masticophis flagellum*), gopher snake, and western rattlesnake (*Crotalus viridis*).

Table 8-1 identifies the plant communities discussed above and their corresponding acreage within the property boundary that may be disturbed as a result of the Proposed Project.

TABLE 8-1
Vegetation Communities, Land Cover Types, and Corresponding Acreage Within the Limit of Disturbance

Vegetation Community/ Land Cover Types	Total Acreage at CCL by Vegetation Community/ Land Cover Type	Acreage within Limit of Disturbance	Percent of Disturbance
Active Landfill	170.0	170.0	100
Disturbed	13.5	12.6	93
Dry Wash	2.1	2.1	100
Dry Wash (Mule Fat Dominant)	7.1	7.1	100
Mixed Riversidean Sage Scrub/ Non-Native Grassland	35.2	34.9	99
Non-Native Grassland	47.9	47.6	99
Non-Native Grassland with Scattered Shrubs	43.3	42.8	99
Revegetated	117.7	117.2	100
Riparian Woodland*	0.6	0.6	100
Riversidean Sage Scrub*	128.0	117.5	92
Roads and Infrastructure	48.9	48.4	99
Ruderal	10.7	10.7	100
Southern Mixed Chaparral*	14.4	13.6	94
TOTAL	**639.4**	**625.1**	**97.8**

*Vegetation communities that are ranked on the *Natural Communities List* sensitive with G or S rating at 3 or lower are considered to be sensitive.

Ranking system is based on Faber-Langendoen et al. 2009: G1/S1 - critically impaired, G2/S2 - imperiled, G3/S3 - vulnerable, G4/S4 - apparently secure, and G5/S5 - secure.

Sources:

California Department of Fish and Wildlife (CDFW), Vegetation Classification and Mapping Program. 2010b. *List of Vegetation Alliances and Associations: Hierarchical List of Natural Communities with Holland Types*. September.

Faber-Langendoen, D., L. Master, J. Nichols, K. Snow, A. Tomaino, R. Bittman, G. Hammerson, B. Heidel, L. Ramsay, and B. Young. 2009. NatureServe Conservation Status Assessments: Methodology for Assigning Ranks. NatureServe, Arlington, VA.

8.5.2 Special Habitat Features

Special habitat features can provide substantial benefit to wildlife populations and are an important component of wildlife habitat, often determining the presence of some species. Special habitat features that were identified at CCL include rocky outcrops, cliffs, crevices and small caverns, sandstone banks/bluffs, and utility towers. Rocky outcrops provide important habitat for species such as the coastal whiptail (*Aspidoscelis tigris stejnegeri*) and San Diego desert woodrat (*Neotoma lepida intermedia*). Higher rocky outcrops and low cliffs are present on the site and may provide nesting sites for raptorial species of birds, including red-tailed hawk, prairie falcon (*Falco mexicanus*), raven (*Corvus corax*), and others. Prairie falcons were observed within the southern portions of the site, utilizing the cliff and grassland habitats. Utility towers may also provide nesting sites and perching locations. The majority of utility towers are located near the landfill entrance; red-tailed hawks were observed perching in these locations, and raven nests have been observed in these utility towers.

Outcrops at CCL also contain crevices and small cavernous openings that provide suitable roosting habitat for many species of bats. These features are found throughout the higher elevations of the site on hill slopes and ridges. Larger cliff systems with many cavernous openings are found in the northern/eastern portions of the landfill; exit surveys conducted at one cliff location indicated that bat roosts are likely present.

8.5.3 Potential Jurisdictional Waters

No wetland evidence supporting positive wetland indicators for soils, hydrology, or vegetation exists at CCL as determined by guidelines provided by USACE (USACE, 1987; USACE, 2008b). Riparian vegetation and distinct bed shelving were observed along the major dry wash drainages, indicating intermittent or ephemeral channel flow. Based on this, there is a potential for waters of the United States jurisdictional drainages. Potential CDFW jurisdictional areas may also be present at CCL based on streambed and bank. Drainages within the CCL site typically flow into leveed detention basins for settling prior to discharge. This provides a level of isolation and sedimentation control for ordinary flows from downstream TNWs.

Riparian habitat including mule fat, cottonwood, and Mexican elderberry along major drainages at CCL would be used to estimate the extent of CDFW jurisdiction, if any, while the OHWM along the major drainages would be used to estimate the extent of USACE jurisdiction, if any.

The Approved/Preliminary Jurisdictional Process provided by USACE (USACE, 2008d) could be used to presume jurisdiction to exclude features from federal jurisdiction based on Rapanos or SWANCC (see discussion above). USACE would make any final determination on federal jurisdiction. CDFW would determine the need for an SAA for impacts to streambed and bank, if any were identified.

Drainages at CCL and the immediate vicinity are shown in Figure 8-4. Added drainage indicator features on Figure 8-4 are colored only to identify the potential drainage areas and are not to scale and do not reflect stream flow. Jurisdiction of these features has not been determined.

8.5.4 Special-Status Natural Communities

The following section addresses special-status natural communities that have been documented in the regional vicinity of CCL. Special-status natural communities are of limited distribution statewide or within a county or region that are vulnerable to environmental effects of projects, which may or may not contain special-status species or their habitat (CDFW, 2009). CDFW's Natural Communities List, Hierarchical List of Natural Communities with Holland Types (2010) ranks rarity and global and state ranks according to NatureServe's methodology (detailed description of this methodology is located in Faber-Langendoen et al., 2009). According to NatureServe, global (G) conservation status ranks include the following: GX - presumed extinct (species) or extinct (ecological communities and systems); GH - possibly extinct; G1 - critically imperiled; G2 - imperiled; G3 - vulnerable; G4 - apparently secure; and G5 - secure. State (S) ranks include SX - presumed extirpated; SH - possibly extirpated, S1 - critically imperiled; S2 - imperiled; S3 - vulnerable; S4 - apparently secure; and S5 - secure (Faber-Langendoen et al., 2009).

8.5.4.1 California Walnut Woodland

California walnut woodland is dominated by southern California walnut (*Juglans californica*) and is ranked as vulnerable (G3 S3) (CDFW, 2010a). This natural community occurs on relatively moist, fine-texture substrates of valleys slopes and bottoms or can be found surrounding rocky outcrops (Holland, 1986). Holland also records this community's distribution occurring on the south side of San Gabriel Mountains to the Santa Ana Mountains and is primarily found at elevations ranging from 500 to 3,000 feet. The nearest documented occurrence for this natural community is approximately 6.8 miles southeast of CCL (CDFW, 2012a). This natural community was not documented within CCL.

8.5.4.2 Mainland Cherry Forest

This natural community consists of holly leaf cherry (*Prunus ilicifolia*) and is ranked as vulnerable (G3 S3), but some associations are of high priority for inventory (CDFW, 2010a). Holly leaf cherry stands occur on steep, dry slopes that are north-facing and in sandstone-derived, rocky soils (Holland, 1986). Historical records from

1935 were documented approximately 3.4 miles northeast of CCL, but these populations are expected to be extirpated according to 1978 aerial photographs (CDFW, 2012a). This natural community was not documented within CCL.

8.5.4.3 Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub is within the California buckwheat scrub alliance. Although the California buckwheat scrub alliance is ranked as secure (G5 S5), this particular community is associated with scalebroom (*Lepidospartum squamatum*) and is a higher priority (CDFW, 2010a). Historical records for this community were documented approximately 2.25 miles northeast of CCL, but are thought to be extirpated by a housing development (CDFW, 2012a). This natural community was not documented within CCL.

8.5.4.4 Southern Coast Live Oak Riparian Forest

This natural community is within the coast live oak woodland alliance, which is dominated by coast live oak (*Quercus agrifolia*), and is ranked as secure and apparently secure (G5 S4) (CDFW, 2010a). Southern coast live oak riparian forests are often associated with canyon bottoms and floodplains, and occur between cottonwood- or willow-dominated streams and more xeric chaparral habitat types (Holland, 1986). The closest occurrence for this natural community is approximately 6.7 miles northeast of CCL and there are multiple occurrences within the regional vicinity of CCL (CDFW, 2012a). This natural community was not documented within CCL. While this woodland alliance is not present on CCL, some scattered coast live oaks are present in other plant communities. SB Horticulture performed an oak tree survey in accordance with the County of Los Angeles Oak Tree Ordinance in 2012 (SB Horticulture, 2014). The Oak Tree Report is included in Appendix E2, and results of the survey are summarized in Section 8.5.6.

8.5.4.5 Southern Cottonwood Willow Riparian Forest

Southern cottonwood willow riparian forest occurs within the Fremont cottonwood forest alliance and is ranked as apparently secure and vulnerable (G4 S3) (CDFW, 2010a). This natural community type is distributed along perennial stream reaches of the Tranverse and Peninsular ranges, from Santa Barbara County to Baja California Norte and the edge of the deserts (Holland, 1986). Occurrence records for this community have been documented within 1 mile of CCL along the Santa Clara River and Castaic Creek (CDFW, 2012a). This natural community was not documented within CCL.

8.5.4.6 Southern Mixed Riparian Forest

The southern mixed riparian forest can consist of a closed or open canopy forest within large drainages or floodplains, which are supported by perennial flow (Holland, 1986). Occurrence records for this community have been documented approximately 6.8 miles south of CCL and were mapped as coast live oak, California sycamore (*Platanus racemosa*), and Fremont's cottonwood (CDFW, 2012a). California sycamore woodlands are ranked as vulnerable (G3 S3), but some associations are of high priority for inventory (CDFW, 2010a). This natural community was not documented within CCL.

8.5.4.7 Southern Riparian Scrub

Southern riparian scrub is a streamside thicket that consists scrubby, multiple willow species on relatively fine-grained sand and gravel bars (Holland, 1986). This natural community was documented approximately 3.4 miles southeast of CCL, and the majority of the regional records are historical (CDFW, 2012a). This natural community was not documented within CCL.

LEGEND

- Limit of Disturbance
- Project Boundary
- Surface Water Feature
- Drainage Basin

N

0 0.125 0.25

Miles

FIGURE 8-4
Surface Water Features
Chiquita Canyon Landfill
Master Plan Revision

8.5.4.8 Southern Sycamore Alder Riparian Woodland

This natural community consists of tall, open, broadleaf woodland dominated by California sycamore and white alder (*Alnus rhombifolia*) (Holland, 1986). Holland also notes that this community occurs on rocky streambeds with seasonally high-intensity flooding; and that white alder abundance increases on perennial streams. White alder grove alliances are ranked as apparently secure (G4 S4), but some associations are of high priority for inventory (CDFW, 2010a). The nearest documented occurrence for this community is 6 miles north of CCL, but records indicate that some of the locations need to be field verified (CDFW, 2012a). This natural community was not documented within CCL.

8.5.4.9 Southern Willow Scrub

Southern willow scrub consists of dense, winter-deciduous willow thickets with scattered Fremont's cottonwood and California sycamore (Holland, 1986). Holland also notes that this community requires flooding to prevent succession of southern cottonwood sycamore riparian forest and once had an extensive range along Southern California rivers. The nearest occurrence of this natural community is approximately 6 miles east southeast of CCL (CDFW, 2012a). This natural community was not documented within CCL.

8.5.4.10 Valley Oak Woodland

This natural community is dominated by valley oak (*Quercus lobata*) and is within the valley oak woodland alliance that is ranked as vulnerable (G3 S3), but some associations are of high priority for inventory (CDFW, 2010a). The nearest documented occurrence for this community is approximately 3.8 miles southeast of CCL, including some historical records (CDFW, 2012a). This natural community was not documented within CCL. While this woodland alliance is not present on CCL, valley oak trees are present in other plant communities. SB Horticulture performed an oak tree survey in accordance with the County of Los Angeles Oak Tree Ordinance in 2012 (SB Horticulture, 2014). The Oak Tree Report is included in Appendix D2, and results of the survey are summarized in Section 8.5.6.

8.5.5 Special-Status Plant and Wildlife Species

The following sections address special-status species observed, reported, or having the potential to occur at CCL or its immediate vicinity. Special-status species include those (1) listed or proposed for listing by state or federal agencies as rare, threatened, or endangered; (2) state Species of Special Concern; (3) species listed by the California Native Plant Society (CNPS) with a designation of Category 2 (indicating species that are rare or endangered in California but more common elsewhere) or 1B (indicating species that are rare or endangered in California and elsewhere); (4) bats identified by the Western Bat Working Group (WBWG) as low, moderate, or high priority species; or (4) species identified by biologists with regional knowledge as being of conservation concern or local interest.

8.5.5.1 Special-Status Plants

Table 8-2 identifies the special-status plant species that have the potential to occur in the general vicinity of CCL, including status, habitat requirements, and range of occurrence in the vicinity of CCL. Species descriptions and occurrence information, unless otherwise indicated, were derived from the CNDDB (CDFW, 2002a, 2005, 2010a, 2012a, and 2012b), CDFW species descriptions (CDFW, 2002b), CDFW SNA Program Information (CDFW, 2002c), Calflora database (Calflora, 2010 and 2012), technical reports (CH2M HILL, 2000a, 2000b, 2000c, and 2000d) and botanical literature (Hickman, 1993).

TABLE 8-2
Potential Special-Status Plant Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/ State/CNPS)	Potential for Occurrence in Area of Potential Effects/ Nearest Identified Occurrence[b,c]	Habitat Requirements
Braunton's Milk-Vetch *Astragalus brauntonii*	**FE/---/1B.1**	This species is recorded south of CCL near Simi Valley; a population was recently discovered in Thousand Oaks. It has historically occurred in Orange, Los Angeles, and Ventura counties. There is low probability of occurrence at CCL.	Chaparral, coastal sage scrub, grasslands; often associated with recent burns or disturbed areas.
California Orcutt Grass *Orcuttia californica*	**FE/SE/1B.1**	Known from 28 occurrences in Ventura, Los Angeles, Riverside, and San Diego counties. Few historical occurrences in northern Baja California (USFWS, 2011b). Observed in the general vicinity of Newhall within 1 mile of the Proposed Project area (CDFW, 2012a). There is low probability of occurrence at CCL.	Vernal pools at elevations 50 to 2,165 feet.
Chaparral Ragwort *Senecio aphanactis*	**---/---/2.2**	Historical record for this occurrence was collected in 1901 in the general vicinity of Saugus (CDFW, 2012a). Unlikely to occur in the Proposed Project area.	Cismontane woodland, coastal scrub.
Club-haired Mariposa Lily *Calochortus clavatus* var. *clavatus*	**---/---/4.3**	The nearest record to CCL is an occurrence of a single plant on a hillside east of the I-5/ SR-126 interchange and southeast of Stanford Avenue. Potential for occurrence in the Proposed Project area.	Chaparral, cismontane woodland, valley and foothill grassland.
Davidson's Bush Mallow *Malacothamnus davidsonii*	**---/---/1B.2**	This species was recorded in 2003 in Potrero Canyon south of Potrero Creek in Newhall Ranch, near transmission lines 0.2 miles south of Pico Canyon Road, about 1 mile southeast from Santa Clara River (CDFW, 2012a). Potential for occurrence in the Proposed Project area.	Coastal scrub, riparian woodland, chaparral in sandy washes.
Greata's Aster *Symphyotrichum greatae*	**---/---/1B.3**	Historical record for this occurrence was collected in 1930 in Hopper Canyon (CDFW, 2012a). Unlikely to occur in the Proposed Project area.	Chaparral, cismontane woodland.
Late-Flowered Mariposa Lily *Calochortus fimbriatus*	**---/---/1B.2**	Multiple occurrences for this species have been documented within 10 miles of the Proposed Project area, primarily in the Santa Susana Mountains (CDFW, 2012a). Unlikely to occur in the Proposed Project area.	Chaparral, cismontane woodland.
Los Angeles Sunflower *Helianthus nuttallii* ssp. *parishii*	**---/---/1A**	Was last seen in 1937 until 5 to 10 individuals were observed in 2002 in the Newhall Ranch area on the southern edge of the Santa Clara floodplain. There is low probability of occurrence in the Proposed Project area.	Marshes and swamps (coastal, salt, and freshwater) at elevations of 32 to 1,640 feet.
Lyon's Pentachaeta *Pentachaeta lyonii*	**FE/SE/1B.1**	The nearest occurrence record is 16 miles away southwest of CCL, in the vicinity of Simi Valley, east of Highway 23, where two populations were recorded in 1991 and 1995 (CDFW, 2012b). Not anticipated in the Proposed Project area.	Chaparral, clearings in chaparral, grasslands, firebreaks.

TABLE 8-2
Potential Special-Status Plant Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/ State/CNPS)	Potential for Occurrence in Area of Potential Effects/ Nearest Identified Occurrence[b,c]	Habitat Requirements
Nevin's Barberry *Berberis nevinii*	**FE/SE/1B.1**	Known to occur in San Francisquito Canyon near the confluence with the Santa Clara River (CDFW, 2012a). Limited potential to occur (chaparral habitat, north-facing slopes).	Chaparral, cismontane woodland, coastal scrub, riparian scrub.
Newhall Sunflower *Helianthus inexpectatus*	**---/---/1B.1**	This species has been documented within 10 miles of the Proposed Project area in Newhall Ranch in the Castaic Spring area (CDFW, 2012a). Not anticipated in the Proposed Project area.	Marshes and swamps, riparian woodland, seeps.
Ojai Navarretia *Navarretia ojaiensis*	**---/---/1B.1**	Multiple occurrences for this species have been documented within 10 miles of CCL, primarily in Newhall Ranch on the west side of Salt Canyon watershed (CDFW, 2012a). There is low probability of occurrence in the Proposed Project area.	Chaparral, coastal scrub, valley and foothill grassland.
Palmer's Grapplinghook *Harpagonella palmeri*	**---/---/4.2**	This species has been documented within 10 miles of the Proposed Project area, near Newhall (CDFW, 2012a). Potential for occurrence in the Proposed Project area.	Grassland, sage scrub, and chaparral.
Peirson's Morning-Glory *Calystegia peirsonii*	**---/---/4.2**	Multiple occurrences for this species have been documented within 10 miles of CCL (CDFW, 2012a). Potential for occurrence in the Proposed Project area.	Chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest.
Plummer's Mariposa Lily *Calochortus plummerae*	**---/---/1B.2**	Multiple occurrences for this species have been documented within 10 miles of the Proposed Project area (CDFW, 2012a). Limited potential for occurrence in study area.	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest.
Rayless Ragwort *Senecio aphanactis*	**---/---/2.2**	No known recent collections. Historical collection from 1901 in the general location of Saugus (CDFW, 2012a). Unlikely to occur in the Proposed Project area.	Cismontane woodland, coastal scrub.
Round-Leaved Filaree *California macrophylla*	**---/---/1.B1**	Documented within 10 miles of the Proposed Project area. This species was observed on the Castaic Mesa, east of the Castaic Lagoon and on the slopes east of Grasshopper Canyon (CDFW, 2012a). Unlikely to occur in the Proposed Project area.	Cismontane woodland, valley and foothill grassland.
San Fernando Valley Spineflower *Chorizanthe parryi* var. *fernandina*	**FC/SE/1B.1**	Multiple occurrences for this species have been documented within 10 miles of the Proposed Project area (CDFW, 2012a). Recent observations in the Newhall Ranch area, Valencia Commerce Center, and near the Magic Mountain site, south of the Santa Clara River (CDFW, 2012a). Potential for occurrence in the Proposed Project area.	Found in coastal scrub in sandy soils at elevations of 150 to 1,220 meters.

TABLE 8-2
Potential Special-Status Plant Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/ State/CNPS)	Potential for Occurrence in Area of Potential Effects/ Nearest Identified Occurrence[b,c]	Habitat Requirements
San Gabriel Bedstraw *Galium grande*	**---/---/1.B2**	This species was documented south of Elizabeth Lake and northeast of Castaic, last seen in 1979 (CDFW, 2012a). Not anticipated in the Proposed Project area.	Cismontane woodland, chaparral, broadleaf upland forest, lower montane coniferous forest.
Santa Susana Tarplant *Deinandra minthornii*	**---/---/1.B2**	Multiple occurrences for this species have been documented within 10 miles of CCL, primary found within the Santa Susana Mountains (CDFW, 2012a). Low probability of occurrence within the Proposed Project area.	Chaparral, coastal sage scrub on sandstone outcrops and crevices.
Short-Joint Beavertail *Opuntia basilaris* var. *brachyclada*	**---/---/1B.2**	Multiple occurrences for this species have been documented within 10 miles of CCL (CDFW, 2012a). This variety is thought to be restricted to the northeastern portion of the San Gabriel Mountains. Unlikely to occur in the Proposed Project area.	Chaparral, Joshua tree woodland, Mohavean desert scrub, pinyon juniper woodland, riparian woodland.
Slender-Horned Spineflower *Dodecahema leptoceras*	**FE/SE/1B.1**	Historically from Los Angeles, Riverside, and San Bernardino counties, but has been extirpated from much of range. Restricted to eight watersheds in Los Angeles, Riverside, and San Bernardino counties. A historical record for this species was last documented in 1893 (CDFW, 2012a). Possibly extirpated from the area and there is low probability of occurrence in the Proposed Project area.	Chaparral, coastal scrub (alluvial fan sage scrub).
Slender Mariposa Lily *Calochortus clavatus* var. *gracilis*	**---/---/1B.2**	Multiple occurrences for this species have been documented within 1 mile of the Proposed Project area (CDFW, 2012a). Potential for occurrence in study area.	Chaparral, coastal scrub. Endemic to Los Angeles County.

[a] Key to Status Designations:

Federal Designations:

(FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed Endangered, (FPT) Federally Proposed Threatened, (FSC) Species of Concern, (FC) Candidate

State Designations:

(SE) State Endangered, (ST) State Threatened, (SR) State Rare, (CSC) Species of Special Concern, (CFP) Fully Protected Species

California Native Plant Society (CNPS) Designations:

(1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution; (.1) Seriously endangered in California; (.2) Fairly endangered in California; (.3) Not very endangered in California.

[b] Potential for occurrence in order of lowest to highest – not anticipated, unlikely, low probability/limited potential, potential

[c] See text for sources.

Braunton's Milk-Vetch (Astragalus brauntonii). Brauton's milk-vetch is federally endangered and is a CNPS List Category 1B.1 species. It typically occurs in chaparral, valley grassland, coastal sage scrub, and closed-cone pine forest (Calfora, 2012). This species is limited to carbonate soils in limestone outcrops and is a short-lived (2 to 3 years) perennial forb that grows to approximately 5 feet in height (Sclafani, 2006). Within the CNDDB, there are 35 record counts for this species in Los Angeles County (Calfora, 2012). There is low probability of occurrence of the species at CCL.

California Orcutt Grass (Orcuttia californica). California Orcutt grass is federally and state endangered and is a CNPS List Category 1B.1 species (CDFW, 2012b). This species is an annual herb native to California and Baja California that occurs in valley grasslands and freshwater wetlands (Calfora, 2012). California Orcutt grass is associated with deep ephemeral vernal pools that are underlain by clay soils (USFWS, 2011b). Plants have leaf and root anatomy and physiology adapted to conditions in the wettest, longest lasting portion of vernal pools (USFWS, 2011b).There is low probability of occurrence of the species in the Proposed Project area due to the lack of suitable habitat at CCL.

Chaparral Ragwort (Senecio aphanactis)**.** Chaparral ragwort is a CNPS List Category 2.2 species (CDFW, 2012b). This species is an annual herb that is native to California and Baja California that is associated with foothill woodland, northern coastal scrub, and coastal sage scrub (Calflora, 2012). There is a historical record for this species that was collected in 1901 in the general vicinity of Saugus (CDFW, 2012a); however, it is unlikely to occur in the Proposed Project area.

Club-Haired Mariposa Lily (Calochortus clavatus* var. *clavatus). The club-haired mariposa lily is a CNPS List Category 4.3 species (CDFW, 2012b). It typically occurs on chaparral, cismontane woodland, and valley and foothill grassland on serpentine clay and rocky soils at elevations between 246 to 4,265 feet. This species is a long-stemmed, perennial bulb found from San Luis Obispo into Ventura and northwest Los Angeles counties. In the Liebre Mountains, this subspecies has been recorded in Mint Canyon, Bouquet Canyon, Texas Canyon, Osito Canyon, Red Mountain, Warm Springs Mountain, Castaic Canyon, Agua Dulce Canyon, Bee Canyon (adjacent to Soledad Canyon), Elizabeth Lake Canyon, and Newhall (CH2M HILL, 2000c). The nearest record to the landfill is an occurrence of a single plant on a hillside 1,000 feet east of the I-5/SR-126 interchange and 250 feet southeast of Stanford Avenue. It was observed in openings in mixed sage scrub (CH2M HILL, 2000c). There is potential for occurrence at CCL.

Davidson's Bush Mallow (Malacothamnus davidsonii). Davidson's bush mallow is listed as a CNPS List Category 1B.2 species (CDFW, 2012b). It is a perennial shrub that is endemic to California and is generally found in coastal scrub, riparian woodlands, and chaparral in sandy washes (Calflora, 2012). According to Calfora, although this species usually occurs in non-wetlands, occasionally it has been found in wetlands. In 2003, samples were collected 0.2 miles south of Pico Canyon Road, about 1 mile southeast from the Santa Clara River (CDFW, 2012a). There is potential for this species to occur in the Proposed Project area.

Greata's Aster (Symphyotrichum greatae)**.** Greata's aster is listed as a CNPS List Category 1B.3 species (CDFW, 2012b). It is a rhizomatous perennial herb that is endemic to California and occurs in chaparral habitats (Calflora, 2012). Although this species has been documented within 10 miles of CCL, the occurrence record was obtained from a 1930 collection in Hopper Canyon (CDFW, 2012a). This species is not expected to occur within the Proposed Project area.

Late-Flowered Mariposa Lily (Calochortus fimbriatus)**.** Late-flowered mariposa lily is listed as a CNPS List Category 1B.2 species (CDFW, 2012b). It is a perennial herb that is native to California and is found between 902 and 6,250 feet (Calflora, 2012). Multiple occurrences for this species have been documented in the Santa Susana Mountains in chaparral and cismontane woodland habitats on serpentine soils (CDFW, 2012a). This species is unlikely to occur in the Proposed Project area.

Los Angeles Sunflower (Helianthus nuttallii* ssp. *parishii). Los Angeles sunflower is listed as a CNPS List Category 1A species, meaning it has been presumed extinct in California (CDFW, 2012b). It is a perennial herb that blooms from August to October (Calflora, 2012). The Los Angeles sunflower was historically found in marshes and swamps at elevations of 32 to 1,640 feet in Los Angeles, Orange, and San Bernardino counties. In 2002, 5 to 10 individuals were observed in the Newhall Ranch area, on the southern edge of the Santa Clara River floodplain (Fausset and Chambers, 2002). This species is not anticipated to occur at CCL because of its extreme rarity and because it typically requires wetland conditions, although it has been found in non-wetlands (Calflora, 2012).

Lyon's Pentachaeta (Pentachaeta lyonii). Lyon's pentachaeta is listed as federally and state endangered and is listed as a CNPS List Category 1B.1 species (CDFW, 2012b). It is an annual herb that blooms from March

through August and is generally found in chaparral and valley and foothill grasslands (Calflora, 2012). This species occurs in a patchy distribution on rocky clay soils of volcanic origin, with a high percentage of bare ground and low percentage of vegetation cover (USFWS, 2008). There are no occurrence records for this species in the immediate vicinity of CCL. The closest observations were more than 16 miles away, in the vicinity of Simi Valley, East of Highway 23 and southwest of the landfill, where two populations were recorded in 1991 and 1995 (CDFW, 2002a). The chaparral vegetation provides potential habitat at CCL for Lyon's pentachaeta, although this species is not anticipated to occur in the Proposed Project area.

Nevin's Barberry (Berberis nevinii). Nevin's barberry is federally and state endangered, and a CNPS List Category 1B.1 species (CDFW, 2012b). This evergreen shrub blooms from March through June (Calflora, 2012) and occurs in coarse soils and rocky slopes in chaparral and gravelly wash margins in alluvial scrub (USFWS, 2009). This species is known to occur in Los Angeles, Riverside, San Bernardino counties and potentially in San Diego County below 900 and 2,000 feet in elevation (USFWS, 2009). This species occurs in San Francisquito Canyon several miles east of the landfill (CDFW, 2012a). A local specimen was mapped on steep north-facing slopes in low grade sandy washes in San Francisquito Canyon near the confluence with the Santa Clara River in 1965 (CDFW, 2005). During a field visit in 1987, the area had been developed with a plant nursery and with agricultural crops in the floodplains. In addition, this is a popular off-highway vehicle area that is heavily disturbed (CDFW, 2012a). This species has limited potential to occur at CCL.

***Newhall Sunflower (Helianthus inexpectatus)*.** The Newhall sunflower is listed as a CNPS List Category 1B.1 species (CDFW, 2012b). This species occurs in marshes, swamps, riparian woodlands, and seeps (Califora, 2012). It has been documented in Newhall Ranch in the Castaic Spring area; however, further investigation has resulted in the observed plant as a new species (CDFW, 2012a). This species is not expected to occur within the Proposed Project area.

***Ojai Navarretia (Navarretia ojaiensis)*.** The Ojai navarretia is listed as a CNPS List Category 1B.1 species (CDFW, 2012b). It occurs in chaparral, coastal scrub, and valley and foothill grassland habitats at elevations ranging from 902 to 2,034 feet (Calflora, 2012). This species has been documented within Newhall Ranch on the western side of the Salt Canyon watershed (CDFW, 2012a). There is low probability of occurrence for this species within the Proposed Project area.

Palmer's Grapplinghook (Harpagonella palmeri). Palmer's grapplinghook is a CNPS List Category 4.2 species (CDFW, 2012b). This small and inconspicuous annual grows on dry slopes and mesas in grassland, sage scrub, and chaparral habitats below 1,500 feet. It typically blooms between March and April and historically occurred from Los Angeles County to Baja California and on the Channel Islands. This species is known to occur in native grassland adjacent to sage scrub in Bouquet Canyon in the general CCL vicinity. Other occurrences in Los Angeles County have been documented at the San Mateo Wilderness Area in the Cleveland National Forest, Santa Catalina Island, and Newhall (Calflora, 2012). There is potential for occurrence at within the Proposed Project area.

Peirson's Morning-Glory (Calystegia peirsonii). Peirson's morning-glory is a CNPS List Category 4.2 species (CDFW, 2012b). This species is a perennial herb that grows as a vine on the ground or on other plants in Los Angeles County. It is found in openings in coastal sage scrub and chaparral habitats typically in disturbed or grassy open areas in elevations between 3,280 and 4,921 feet. This species occurs in coastal sage scrub throughout the Newhall-Mint Canyon region (Calflora, 2012). There is potential for occurrence within the Proposed Project area.

Plummer's Mariposa Lily (Calochortus plummerae). The Plummer's mariposa lily is a CNPS List Category 1B.2 species (CDFW, 2012b). This late blooming (May through July) mariposa lily is found in dry, rocky areas of alluvial fan sage scrub, chaparral, coastal sage scrub, and lower coniferous forest habitats at elevations less than 5,577 feet. This species is known to occur in Los Angeles, Ventura, Orange, Riverside, and San Bernardino counties (Calflora, 2012). Multiple occurrences for this species have been documented within 10 miles of CCL (CDFW, 2012a). There is limited potential for occurrence within the Proposed Project area.

Rayless Ragwort (Senecio aphanactis). The rayless ragwort is a CNPS List Category 2.2 species (CDFW, 2012b) that typically blooms between January and April. This annual herb grows in alkaline soils in cismontane woodland and coastal sage scrub in drying alkaline flats at elevations of 66 to 1,887 feet. Rayless ragwort is known from Southern California in several counties including Los Angeles County. This species is known historically to occur (1901) in drying alkaline flats in Saugus within 5 miles from the study area (CDFW, 2012a). This species is not anticipated to occur in the Proposed Project area due to lack of habitat.

***Round-Leaved Filaree (California macrophylla)*.** Round-leaved filaree is a CNPS List Category 1B.1 species (CDFW, 2012b). This species is associated with cismontane woodland and valley and foothill grassland habitats in clay soils and has been documented on Castaic Mesa (CDFW, 2012a). There are 23 occurrence records for this species in Los Angeles County (Calflora, 2012). Round-leaved filaree is not expected to occur in the Proposed Project area.

San Fernando Valley Spineflower (Chorizanthe parryi* var. *fernandina). San Fernando Valley spineflower is a federal candidate, state endangered, and a CNPS List Category 1B.1 species (CDFW, 2012b). This annual herb grows in sandy soils in coastal sage scrub habitats historically from Los Angeles, Orange, and San Diego counties. A number of occurrences have been documented within 1 mile of CCL, and since 2000, numerous occurrences of this species were observed at Newhall Ranch in multiple locations (CDFW, 2012a). There is limited potential for occurrence in the Proposed Project area.

***San Gabriel Bedstraw (Galium grande)*.** San Gabriel bedstraw is a CNPS List Category 1B.2 species (CDFW, 2012b). This species is associated with cismontane woodland, chaparral, broadleafed upland forest, and lower montane coniferous forest habitats between 1,394 and 3,937 feet (CDFW, 2012b). A historical record for this species was obtained from a 1979 collection south of the Elizabeth Lake guard station, northeast of Castaic (CDFW, 2012a). This species is not anticipated to occur within the Proposed Project area.

***Santa Susana Tarplant (Deinandra minthornii)*.** Santa Susana tarplant is listed a state rare species and is a CNPS List Category 1B.2 species (CDFW, 2012b). This species is associated with chaparral and coastal scrub habitats on sandstone outcrops and crevices (CDFW, 2012a). It has been documented within the Santa Susana Mountains near Hialeah Springs and between Fern Ann Falls and Devil Canyon (CDFW, 2012a). This species is not expected to occur within the Proposed Project area.

Short-Joint Beavertail (Opuntia basilaris* var. *brachyclada). Short-joint beavertail is a federal Species of Concern and is listed as a CNPS List Category 1B.2 species (CDFW, 2012b). This subspecies of beavertail cactus is found in chaparral, Joshua tree woodlands, desert scrub, and pinyon juniper woodland in the San Gabriel and San Bernardino mountain ranges. It typically occurs at elevations less than 3,936 to 5,905 feet and blooms between April and June. This species is documented to occur in Los Angeles and San Bernardino counties, and has been recorded in Newhall (Calflora, 2012). There is limited potential for this species to occur within the Proposed Project area.

Slender-Horned Spineflower (Dodecahema leptoceras). Slender-horned spineflower is listed as federally and state endangered as well as a CNPS List Category 1B.1 species (CDFW, 2012b). The spineflower is a small annual rosette of leaves with spreading stems that is generally restricted to silty, flood-deposited, older alluvial surfaces. The slender-horned spineflower is restricted to eight watersheds in Los Angeles, Riverside, and San Bernardino counties between 656 to 2,296 feet in elevation. These include the Santa Clara River, Big Tujunga Wash, Lytle Creek, Santa Ana River, San Jacinto River, Bautista Creek, Temescal Canyon, and Vail Lake (CDFW, 2002c). A historical occurrence was recorded in the Newhall area in 1893 (CDFW, 2012a). The species has also been recorded east of CCL in Bee Canyon, Santa Clarita (Calflora, 2010).There is some potential for occurrence within the Proposed Project area.

Slender Mariposa Lily (Calochortus clavatus* var. *gracilis). The slender mariposa lily is a CNPS List Category 1B.2 species (CDFW, 2012b). It is a perennial species that is found in shaded foothill canyons, often in grassy slopes within elevations of 1,378 to 2,500 feet. Multiple occurrences for this species have been documented within 1 mile off the Proposed Project area (CDFW, 2012a). Two collections of this species were documented within 5 miles of CCL, in 1930 and 1941 (CDFW, 2005). These have occurred at the mouth of Pico Canyon near

Newhall in grassy slopes under oaks in chaparral on south facing slopes. In 2000, approximately 300 plants were observed north of Cooper Hill Drive and on the western side of San Francisquito Canyon, and multiple occurrences for this species have been documented within 1 mile of the Proposed Project area (CDFW, 2012a). Because of the occurrence approximately a mile from the site, there is some potential for occurrence at CCL.

8.5.5.2 Special-Status Wildlife

Table 8-3 identifies the special-status wildlife species that have the potential to occur in the general vicinity of the landfill, and includes status, habitat types, potential for occurrence, and records of occurrence in the vicinity of CCL. This section provides species descriptions and additional information about occurrences at CCL.

TABLE 8-3
Potential Special-Status Wildlife Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/State/ Other[b]	Potential for Occurrence in Area of Potential Effects[c]	Nearest Identified Occurrence[d]	Habitat Requirements
Birds				
Bell's Sage Sparrow *Amphispiza belli*	**---/CSC/---**	Low	Southeast of Castaic Lake	Nests in chaparral dominated by dense chamise (*Adenostoma fasciculatum*) stands and coastal sage scrub (CDFW, 2012a).
Burrowing Owl *Athene cunicularia*	**---/CSC/LACo-PII**	Low	Hasley Canyon (CNDDB), 2007	Open grasslands and agricultural fields with burrowing mammal populations.
California Condor *Gymnogyps californianus*	**FE/SE/LACo-PII**	Low	Los Padres National Forest	Forages in open country; nests on isolated cliff faces.
California Horned Lark *Eremophila alpestris actia*	**---/CSC/LACo-PI**	High, Observed (nest, forage)	Potentially onsite, subspecies not confirmed	Open grasslands, agricultural fields, disturbed and barren areas.
Coastal Cactus Wren *Campylorhynchus brunneicapillus couesi*	**---/CSC/LACo-PII**	Unlikely	---	Obligate, coastal sage scrub with extensive stands of *Opuntia* sp.
Coastal California Gnatcatcher *Polioptila californica*	**FT/CSC/LACo-PII**	Unlikely	Critical habitat 7.5 miles east of CCL; Placerita Canyon, 2001	Obligate, permanent resident of coastal sage scrub or chaparral in vicinity of coastal sage scrub.
Cooper's Hawk *Accipiter cooperii*	**---/CSC/---**	High, Observed (forage)	Santa Clara River (CNDDB); onsite	Riparian woodland and forest, including willows, cottonwoods, and sycamores.
Golden Eagle *Aquila chrysaetos*	**BCC/CFP/LACo-PII**	High (forage)	---	Open country, rolling foothills, mountain areas and desert; breeds on overhanging ledges, high cliff sites, and large trees.
Grasshopper Sparrow *Ammodramus savannarum*	**---/CSC/LACo-PII**	Low	Tapia Canyon, north of Newhall	Dense grasslands on rolling hills, lowland plains in valleys and on lower mountain slopes (CDFW, 2012a).
Least Bell's Vireo *Vireo bellii pusillus*	**FE/SE/LACo-PII**	Present downstream	Critical habitat on Santa Clara River; documented on river in 1996	Dense riparian scrub, with some overstory canopy with high structural diversity; includes willows, mule fat, and cottonwoods.

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Potential Special-Status Wildlife Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/State/ Other[b]	Potential for Occurrence in Area of Potential Effects[c]	Nearest Identified Occurrence[d]	Habitat Requirements
Loggerhead Shrike *Lanius ludovicianus*	**BCC/CSC/LACo-PII**	Moderate to High, Observed	Castaic Creek; onsite	Grasslands, sage scrub, chaparral, riparian, alluvial, and characterized by open scattered trees and shrubs.
Northern Harrier *Circus cyaneus*	**---/CSC/LACo-PII**	Moderate	---	Breeds in open country such as grasslands and agricultural fields near wetlands; prefers extensive grasslands.
Prairie Falcon *Falco mexicanus*	**BCC/CSC/LACo-PI**	High, Observed (forage)	Los Padres National Forest; onsite	Forages in open, arid country; breeds on cliff sites.
Short-Eared Owl *Asio flammeus*	**---/CSC/LACo-PI**	Moderate, Observed	Onsite	Areas with few trees such as grasslands, coastal estuaries, and wetlands.
Southern California Rufous-Crowned Sparrow *Aimophila ruficeps canescens*	**---/CSC/---**	Moderate	White Oak Park and Bouquet Canyon	Coastal sage scrub and spare mixed chaparral (CDFW, 2012a).
Southwestern Willow Flycatcher *Empidonax traillii extimus*	**FE/SE/LACo-PII**	Present downstream	---	Dense early seral stage willow and mule fat scrub with some riparian overstory trees.
Tricolored Blackbird *Agelaius tricolor*	**---/CSC/LACo-PII**	High, Observed	Onsite	Robust emergent marsh for breeding, or open areas for foraging.
Western Yellow-Billed Cuckoo *Coccyzus americanus occidentalis*	**FC; BCC/SE/LACo-PII**	Extirpated	Santa Clara River, 1979	Dense, wide riparian woodlands with well-developed understories adjacent to slow-moving watercourses, backwaters, or seeps.
White-Tailed Kite *Elanus leucurus*	**---/CFP/LACo-PII**	High (forage)	Confluence of Santa Clara River and Castaic Creek, 1999	Open country with trees such as oak, willow, and sycamore.
Yellow-Breasted Chat *Icteria virens*	**---/CSC/LACo-PII**	Low; Present downstream	Santa Clara River	Dense scrub and early seral stage riparian habitat including willow and mule fat thickets.
Yellow Warbler *Dendroica petechia brewsteri*	**BCC/CSC/LACo-PII**	Moderate (transient); downstream	Santa Clara River (CNDDB)	Dense riparian woodland and scrub, including willows, cottonwoods, sycamores, and mule fat.
Amphibians				
Arroyo Toad *Bufo californicus*	**FE/CSC/---**	Present downstream and upstream in critical habitat	San Francisquito Creek	Perennial or intermittent streams with shallow gravelly pools lasting a minimum of 60 to 90 days; sandy streamside terraces.
California Red-Legged Frog *Rana aurora draytonii*	**FT/CSC/---**	Low potential downstream	Critical habitat high on the watershed on Castaic Creek	Aquatic habitats consisting of streams or wetland areas with limited emergent vegetation, dense riparian vegetation, and an absence of bullfrogs.

TABLE 8-3
Potential Special-Status Wildlife Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/State/ Other[b]	Potential for Occurrence in Area of Potential Effects[c]	Nearest Identified Occurrence[d]	Habitat Requirements
Coast Range Newt *Taricha torosa*	**---/CSC/---**	Moderate potential downstream	---	Coastal drainages in Southern California; slow moving streams and ponds with adjacent intact terrestrial vegetation.
Foothill Yellow-Legged Frog *Rana boylii*	**---/CSC/---**	Unlikely	North of Lake Piru, 1949	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats (CDFW, 2012a).
Western Spadefoot *Spea hammondii*	**---/CSC/---**	Moderate	San Francisquito Creek, 2001	Seasonal pools lacking fish, bullfrogs, and crayfish for breeding; adjacent grasslands for foraging.
Reptiles				
Belding's Orange-Throated Whiptail *Aspidoscelis hyperythra belding*	**---/CSC/---**	Unlikely	---	Low elevation Riversidean sage scrub, chaparral, and valley-foothill hardwood habitats, and washes with outcrops.
Coastal Western Whiptail *Aspidoscelis tigris stejnegeri*	**---/CSC/---**	Moderate	---	Open, arid rocky areas with sparse vegetation.
San Diego Horned Lizard/Coast Horned Lizard *Phrynosoma blainvillei*	**---/CSC/---**	Moderate to High	Soledad Canyon, Saugus	Open grassland, scrub, and chaparral with harvester ant mounds.
Silvery Legless Lizard *Anniella pulchra*	**---/CSC/---**	Moderate	---	Sandy and loose loamy soils under sparse vegetation of beaches, chaparral, pine-oak woodland, or sycamores, cottonwoods, or oaks that grow on stream terraces.
Two-Striped Garter Snake *Thamnophis hammondii*	**---/CSC/---**	Present downstream	Santa Clara River, 2002	Aquatic stream channels with large sandy or rocky streambeds with dense adjacent riparian canopy.
Western Pond Turtle *Emys marmorata*	**---/CSC/---**	Present downstream	Santa Clara River, 2000	Perennial watercourses with pools up to 2 feet deep and basking sites.
Mammals				
Big Free-Tailed Bat *Nyctinomops macrotis*	**---/CSC/WBWG: MH**	Low	Burbank, 1997	Open or urban areas; rugged, rocky terrain.
California Leaf-Nosed Bat *Macrotus californicus*	**---/CSC/WBWG: H**	High	Bell Canyon; another site 11 miles southwest	Desert riparian, succulent scrub, desert scrub, and other arid habitats; roosts in mines, caves far from human habitation.
Cave Myotis *Myotis velifer*	**---/CSC/WBWG: M**	Low	Valencia, 1994	Desert scrub, desert succulent scrub, and desert riparian; cave dwelling, may also roost in rock crevices, old buildings, carports, and abandoned cliff swallow nests.
Long-Eared Myotis *Myotis evotis*	**---/---/WBWG: M**	Moderate to High	Pasadena	Scrub, chaparral, open areas; uses small caves and crevices for roosting.

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Potential Special-Status Wildlife Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/State/ Other[b]	Potential for Occurrence in Area of Potential Effects[c]	Nearest Identified Occurrence[d]	Habitat Requirements
Long-Legged Myotis *Myotis volans*	**---/---/WBWG: H**	Moderate to High	Pasadena	Coastal scrub, chaparral, woodlands; roosts in rock crevices, buildings, and under tree bark.
Mexican Long-Tongued Bat *Choeronycteris mexicana*	**---/CSC/ WBWG: H**	Low	Ventura County	Forages on nectar, pollen, and occasionally fruit; roosts in dimly lit buildings or caves.
Pallid Bat *Antrozous pallidus*	**---/CSC/ WBWG: H**	Moderate	Castaic (CNDDB), 1938	Forages close to ground in open areas; roosts in caves, rock crevices, mines, buildings, and hollow trees.
Pocketed Free-Tailed Bat *Nyctinomops femorasaccus*	**---/CSC/ WBWG: M**	Low	Inglewood, 1994	Forages over ponds, streams, or open habitat; roosts in rock crevices in cliff sites.
San Diego Black-Tailed Jackrabbit *Lepus californicus bennettii*	**---/CSC/---**	Moderate	---	Coastal sage brush, and scrub and grasslands.
San Diego Desert Woodrat *Neotoma lepida intermedia*	**---/CSC/---**	Moderate	---	Moderate to dense canopy chaparral, Riversidean sage scrub, woodlands; rocky outcrops and rocky slopes.
Spotted Bat *Euderma maculatum*	**---/CSC/WBWG: H**	Low	Castaic Creek, 1890	Forages on medium-sized moths, beetles, and caddis flies in desert scrubland open forest areas; roosts in rock crevices on cliff faces.
Townsend's Western Big-Eared Bat *Corynorhinus townsendii*	**---/CSC/WBWG: H**	Low	Santa Cruz Island	Variety of open habitats; day and maternity roosts in caves, mines, tunnels, buildings.
Western Mastiff Bat *Eumops perotis californicus*	**---/CSC/WBWG: H**	High	North of Lake Piru, 1992	Roost in rock crevices on high cliff faces, high buildings, trees, and tunnels; forages over a variety of habitats including coastal scrub, and urban areas.
Yuma Myotis *Myotis yumanensis*	**---/---/WBWG: LM**	Moderate to High	---	Widespread in California; forages over water; roosts in buildings, mines, and crevices.
Fish				
Arroyo Chub *Gila orcutti*	**---/CSC/---**	Present downstream and upstream	Santa Clara River, 2005	Cool perennial streams with riffles and pools, with sand and mud substrates, and dense riparian canopy.
Santa Ana Sucker *Castostomus santaanae*	**FT/CSC/---**	Present downstream and upstream	Santa Clara River, 2007	Cool, clear water streams; prefer sand, boulder, or cobble bottoms with presence of filamentous algae.
Southern Steelhead Trout *Oncorhynchus mykiss irideus*	**FE/CSC/---**	Present downstream	Fillmore Quadrant (CNDDB, 2010)	Dependent on life stage; tributary streams with gravel substrates.

TABLE 8-3
Potential Special-Status Wildlife Species, Chiquita Canyon Landfill

Species	Status[a] (Federal/State/ Other[b]	Potential for Occurrence in Area of Potential Effects[c]	Nearest Identified Occurrence[d]	Habitat Requirements
Unarmored Threespine Stickleback *Gasterosteus aculeatus williamsoni*	**FE/SE; CFP/---**	Present downstream and upstream	Castaic Creek, 2005	Weedy pools and backwaters in small, slow, clear streams and rivers.
Invertebrates				
San Emigdio Blue Butterfly *Plebulina emigdionis*	**---/---/ (local conservation concern)**	Low	Northern Los Angeles County; Bouquet/Mint Canyons	Larval hostplant is Atriplex canescens; in shadscale scrub in desert canyons and washes.

[a] Key to status designations-

Federal Designations:

(FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed Endangered, (FPT) Federally Proposed Threatened, (FC) Candidate, (BCC) Birds of Conservation Concern

State Designations:

(SE) State Endangered, (ST) State Threatened, (SR) State Rare, (CSC) Species of Special Concern, (CFP) Fully Protected Species

Other Designations:

(WBWG) Western Bat Working Group: low, moderate, and high priority

Los Angeles County Sensitive Bird Species List:

(LACo-PI) County Sensitive Bird Species, (LACo-PII) County Sensitive Bird Species listed by other agencies

Source: Los Angeles Audubon. 2009. Los Angeles County's Sensitive Bird Species. *Western Tanager* 75(3):E1-E24.

[c] Potential rankings in order of lowest to highest – Extirpated, Unlikely, Low, Moderate, High, Observed/Present

[d] See text for sources.

Birds

***Bell's Sage Sparrow (Amphispiza belli belli)*.** Bell's sage sparrow is a California Species of Special Concern (CDFW, 2011). This species nests in chaparral habitat dominated with dense stands of chamise and within the southern portion of its range, Bell's sage sparrow is found in coastal sage scrub (CDFW, 2012a). Multiple occurrences for this species have been documented within 10 miles of the Proposed Project area, including southeast of Castaic Lake and in Bouquet Canyon (CDFW, 2012a). Suitable habitat is not present at CCL; therefore, this species has low potential to occur at CCL.

Burrowing Owl (Athene cunicularia). The burrowing owl is a California Species of Special Concern (CDFW, 2011). This species is widespread throughout the western United States, but has declined in this and many other areas due to habitat modification, poisoning of its prey, and introduction of nest predators. This species is diurnal, usually nonmigratory in this portion of its range. It excavates nests in the ground, often enlarging burrows of ground squirrels. It is found in low densities in desert habitats, but can occur in much higher densities near agricultural lands, where rodent and insect prey is more abundant. In 2005, a burrowing owl was observed along the bank of the Santa Clara River, southeast of the Soledad Road crossing (CDFW, 2012a). In 2007, one occurrence from the CNDDB was recorded in Hasley Canyon, about 0.60 miles northwest of Castaic Junction (CDFW, 2012a). Limited suitable habitat is present at CCL; however, neither individuals nor burrows were observed, in spite of ground surveys in open habitats. The species has low potential to occur at CCL.

California Condor (Gymnogyps californianus). The California condor is listed as federal endangered species under the FESA and state endangered under the CESA (CDFW, 2011). This species occurs in the nearby Los Padres National Forest and forages widely. The California condor is a permanent resident of the semiarid,

rugged mountain ranges surrounding the southern San Joaquin Valley, including the Coast Ranges from Santa Clara County south to Los Angeles County, the Transverse Ranges, Tehachapi Mountains, and southern Sierra Nevada (CDFW, 2002b). This species is a strict scavenger of carrion and forages over wide areas of open range. The California condor occurs most commonly between sea level and 9,000 feet and nests at elevations from 2,000 to 6,500 feet (CDFW, 2002b). This species breeds annually and lays one egg between February to May. Nesting generally occurs in caves and sheltered rocky outcrops on the face of steep cliffs, where both parents alternate in incubating and feeding duties.

Captive breeding of the California condor has been in effect for over two decades. Since 1992, California condors have been released into the wild (Los Angeles Zoo, 2002a). The Sespe Condor Sanctuary in the Los Padres National Forest appears to be the closest nesting habitat used by California condors (Los Angeles Zoo, 2002b). The California condor may occasionally forage at the landfill (none have been documented), but given its wide-ranging habits, is anticipated to have a low potential of occurring at CCL.

California Horned Lark (Eremophila alpestris actia). This species is commonly found on bare ground, disturbed areas, grassland, and open agricultural fields. The California horned lark is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species is found along the coast of Northern California, in the San Joaquin Valley, in the coast ranges south of San Francisco Bay, and in Southern California west of the deserts. In Southern California, this subspecies is a fairly common breeding resident in grasslands and other dry, open habitats. During the winter season, other subspecies occur in Southern California, and the horned lark (including its subspecies) can be locally common in the region. This species is known to occur in plowed fields and grassland habitat in the vicinity of CCL (Guthrie, 1999). Horned larks of unknown race were detected at the landfill during surveys on open, revegetated landfill in April 2002; the subspecies may breed at CCL.

Coastal Cactus Wren (Campylorhynchus brunneicapillus couesi). This species is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). The coastal cactus wren is an obligate, nonmigratory resident of the coastal sage scrub plant community (Westman, 1983). It is closely associated with three species of cacti and occurs almost exclusively in thickets of cholla (*Opuntia prolifera*) and prickly pear (*Opuntia littoralis* and *Opuntia oricola*) dominated by stands of coastal sage scrub. This species is found at elevations below 1,476 feet on mesas and lower slopes of the coastal ranges (University of California, Riverside, 2001). No CNDDB records occur for this species in the vicinity of CCL, and none were observed during the course of field surveys. Because of the lack of stands of Opuntia cactus at the landfill, there is no suitable habitat, and the species is not anticipated to occur.

Coastal California Gnatcatcher (Polioptila californica californica). The coastal California gnatcatcher is listed as a federally threatened species under the FESA and as a California Species of Special Concern by CDFW (CDFW, 2011). This species is localized and occurs in arid and coastal regions of Los Angeles, Orange, Riverside, and San Diego counties. The California gnatcatcher occurs in or near sage scrub habitat with characteristic species of California sagebrush, various species of sage, California buckwheat, lemonade berry (*Rhus integrifolia*), and prickly pear (*Optunia* spp.). Gnatcatchers generally tend to prefer open stands of sage scrub, occurring in higher numbers in scrub habitat with an open canopy, and in low numbers or absent in dense, tall scrub with a closed overstory canopy. However, gnatcatchers have also been detected utilizing non-sage scrub habitats for foraging during drought. The nesting season is late February to August.

Sage scrub habitat occurs onsite, exhibiting vegetation densities ranging from open to moderate cover; however, the habitat is not optimal, and the landfill is at the northern limit of the species' range. Records for California gnatcatcher occur in Placerita Canyon north of Highway 14, about 15 miles east of the site (Harris, pers. comm., 2002).

Cooper's Hawk (Accipiter cooperii). The Cooper's hawk is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species commonly breeds in riparian areas and oak woodlands. The Cooper's hawk is also found where wooded areas occur in patches and groves and often uses patchy woodlands and edges with snags for perching. This species primarily feeds on avian prey caught in the air, on the ground, and in vegetation. Within their range in California, it most frequently uses dense stands of oak, riparian deciduous, or other forest habitats near water (Zeiner et al., 1990a). Historical records from the CNDDB indicate that

one occurrence was documented in 1997 along the Santa Clara River, approximately 3 to 4 miles east of Piru in Ventura County. Although no breeding habitat is present at CCL, Cooper's hawks have been observed foraging over the area during the field surveys in chaparral and riparian edge habitats.

Golden Eagle (Aquila chrysaetos).The golden eagle is recognized as a California Species of Special Concern and is Fully Protected by CDFW (CDFW, 2011). Habitat for this species is typically rolling foothills, mountain areas, and desert. Golden eagles need open terrain for hunting and prefer grasslands, deserts, savannah, and early successional stages of forest and shrub habitats. This species prefers to nest in rugged, open habitats with canyons and escarpments, with overhanging ledges and cliffs and large trees used as cover. No CNDDB records occur for this species in the vicinity of CCL. No golden eagles were observed during field surveys or have been reported as observed, but there is a potential for golden eagles to forage in open habitats similar to those at CCL, including grasslands and revegetated landfill.

***Grasshopper Sparrow (Ammodramus savannarum)*.** The grasshopper sparrow is recognized as a California Species of Special Concern (CDFW, 2011). Its general habitat associations include dense grasslands on rolling hills, lowland plains, valleys, and hillsides on lower mountain slopes. For nesting, this species prefers native grasslands with a mix of grasses, forbs, and scattered shrubs and is loosely colonial (CDFW, 2012a). Multiple occurrences for this species have been documented within 10 miles of the Proposed Project area, including Tapia Canyon, San Francisquito Canyon, Wayside Canyon southeast of Castaic Lake, Bouquet Canyon, and near Piru Creek and Aqua Blanca Creek (CDFW, 2012a). CCL provides very limited foraging or breeding habitat; therefore, this species has a low potential occur within the Proposed Project area.

Least Bell's Vireo (Vireo bellii pusillus). The least Bell's vireo is federally and state-listed endangered species (CDFW, 2011). The least Bell's vireo nests and forages almost exclusively in lowland riparian woodland habitats (Garrett and Dunn, 1981; Franzreb, 1989). It is typically associated with willow, cottonwood, mule fat, or other riparian plant species, and often in areas with high structural diversity, including overstory trees and understory saplings and shrubs. Because willow (*Salix* spp.) and mule fat are typically the most abundant species in vireo habitat, these species appear to be most commonly selected for nesting (Franzreb, 1989). The nesting season for least Bell's vireo is generally between April 10 to July 31, and the entire breeding season lasts up to August 31 (USFWS, 1986 and 1992). The vireo is now a rare and local summer resident of Southern California's lowland riparian woodlands.

Individual least Bell's vireo have been observed over the years in the Santa Clara River, between I-5 and its confluence with Castaic Creek (CDFW and USACE, 1999), and nesting has been documented in dense riparian areas along the Santa Clara River (Guthrie, 1996). USFWS has designated critical habitat for this species, which lies approximately 0.6 miles south of the landfill, along the Santa Clara River.

There is no suitable habitat for this species at CCL. Riparian areas at the landfill consist of scattered to moderately dense mule fat in fairly limited stands, with no adjacent riparian canopy. They are generally open to adjacent upland areas. Cottonwood trees on the site are small and generally scattered, and do not form a continuous canopy. There is suitable habitat downstream along the Santa Clara River, within the area of potential water quality impacts.

Loggerhead Shrike (Lanius ludovicianus). The loggerhead shrike is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). Loggerhead shrikes are common residents and winter visitors of California foothills and lowlands. This species can be found within open habitat types including sage scrub, non-native grasslands, chaparral, riparian, croplands, and areas characterized by open scattered trees and shrubs; fences, posts, or other potential perches are typically present. The loggerhead shrike forages for large insects over open ground within areas of short vegetation, usually impaling prey on thorns, wire barbs, or sharp twigs to cache for later feeding. A loggerhead shrike was detected in the vicinity of Castaic Creek in 1999, approximately 1 mile northeast of the landfill by a BonTerra Consulting staff biologist (BonTerra Consulting, 1999), breeding birds were detected on Chiquita Canyon Landfill during surveys in 1995, and individuals were observed by CH2M HILL biologists in 2007. Suitable habitat is present throughout the landfill, and the species has a moderate to high potential of breeding within the shrubby areas at CCL.

Northern Harrier (Circus cyaneus). This species is recognized as a California Species of Special Concern (CDFW, 2011). The Northern Harrier is frequently found in meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands. This species prefers to nest in emergent marsh vegetation along rivers and lakes, but may also nest in grassland and agricultural fields. The northern harrier is a regular winter migrant, but only occasionally breeds in Los Angeles County; populations have been greatly reduced due to loss of habitat. No CNDDB records occur for this species in the vicinity of CCL (CDFW, 2012a), and northern harrier was not observed during the course of field surveys. In general, it prefers more extensive grasslands than can be found at the landfill; and no wetlands are present. CCL provides very limited foraging or breeding habitat, making the species unlikely to occur.

Prairie Falcon (Falco mexicanus). The prairie falcon is recognized as a California Species of Special Concern (CDFW, 2011). This species forages in open country, including deserts, prairies, agricultural lands, and open playa. Nest sites are generally located in arid regions, usually in a scrape on a sheltered ledge, and in open terrain with canyons, cliffs, escarpments, and rocky outcrops. Preferred nest sites are on higher cliffs and escarpments. No CNDDB records occur for this species at CCL, and prairie falcons were not observed during the course of field surveys; however, they occur commonly in the Los Padres National Forest. Nonetheless, this species has some potential of breeding in the vicinity of CCL due to the occurrence of hardened sandstone escarpments, which may be used for nesting. Suitable forage habitat is present at the landfill on open grasslands or revegetated landfill. There is suitable cliff habitat located in the southern portion, north canyon, and northwestern corner of the property. Prairie falcons were observed in the southern portions of CCL.

Short-Eared Owl (Asio flammeus). The short-eared owl is recognized as a California Species of Special Concern (CDFW, 2011). This species commonly occurs in areas with few trees, such as agricultural fields, grasslands, and coastal estuaries. Within Southern California, where it is considered a non-breeding bird, it is seen in saltwater marshes, freshwater marshes, tall grass meadows, and agricultural lands at almost any time of year, but most commonly late August through mid-April (Terres, 1980). Although no CNDDB records occur for this species in the vicinity of CCL, one short-eared owl was observed during the course of field surveys in 2007.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*). The southern California rufous-crowned sparrow is a Species of Special Concern (CDFW, 2011). This species is a resident in southern California coastal sage scrub and sparse mixed chaparral habitats and frequents relatively steep, rocky hillsides with grass and forb patches (CDFW, 2012a). This species has been documented within 10 miles of CCL and has been observed in White Oak Park and west of Bouquet Canyon (CDFW, 2012a). CCL provides very limited foraging or breeding habitat; therefore, this species has a low potential to occur within the Proposed Project area.

Southwestern Willow Flycatcher (Empidonax traillii extimus). The southwestern willow flycatcher is listed as a federally and state endangered species (CDFW, 2011). This species breeds in dense willow and other riparian thickets. The species generally requires extensive stands of willow scrub, with some riparian overstory present. This species arrives on breeding grounds in May and June and departs in August to mid-September.
It historically bred in lowland riparian habitat throughout Southern California, but it has been extirpated from most regions. It still breeds in isolated locations, including riparian woodlands in Kern, Santa Barbara, and San Diego counties, and in locations along the Colorado River where native riparian vegetation is still intact (City of San Jacinto, 2001).

Review of CNDDB records and other documents has indicated that the southwestern willow flycatcher has not been detected within the vicinity of CCL (CDFW, 2012a), and no suitable habitat exists at the landfill. There is suitable habitat downstream along the Santa Clara River and potential for this species exists; however, there are no recent records of occurrence in this location.

Tricolored Blackbird (Agelaius tricolor). The tricolored blackbird is recognized as a California Species of Special Concern (CDFW, 2011). This species is nomadic, wandering during the non-breeding season and occupying colony sites intermittently (Unitt, 1984). During the breeding season, it is gregarious and a colonial nester that requires freshwater marshes and ponds for nesting and grasslands and agricultural fields for foraging. Tricolored blackbirds frequent the active landfill areas at CCL, foraging in mixed flocks with other

blackbirds. They were detected during field surveys in April 2002. No breeding habitat is present at the landfill; foraging habitat is limited, and the species has a high potential of foraging directly at CCL.

Western Yellow-Billed Cuckoo (Coccyzus americanus occidentalis). The western yellow-billed cuckoo is recognized as a federal Candidate for Listing by USFWS and is listed as a California Endangered Species by CDFW (CDFW, 2011). In California, the western yellow-billed cuckoo requires dense, wide riparian woodlands with well-developed understories for breeding (Garrett and Dunn, 1981). It is restricted when breeding to river bottoms and other mesic habitats where humidity is high and the dense understory abuts slow-moving watercourses, backwaters, or seeps (Zeiner et al., 1990a). Historical records from the CNDDB indicate that one occurrence was documented in 1979 along the Santa Clara River; however, there are no recent records for this species in the region, and the species is presumed extirpated.

White-Tailed Kite (Elanus leucurus). The white-tailed kite is recognized as a California Fully Protected Species by CDFW (CDFW, 2011). This species nests in stands of oaks, willows, sycamores, and other trees, and forages in low elevation, open grasslands, agricultural areas, and wetlands. This species preys primarily on voles and other small, diurnal mammals, taking small mammal prey approximately 95 percent of the time (Dunk, 1995); as such, its preferred forage habitat is open grasslands. No CNDDB records occur for this species in the vicinity of CCL; however, in 1999, a pair of white-tailed kites successfully nested near the confluence of the Santa Clara River and Castaic Creek (Guthrie, 1999), approximately 1.25 miles east of the landfill. CCL does not have suitable nesting sites; however, there is good forage habitat on open grasslands at CCL.

Yellow-Breasted Chat (Icteria virens). This species is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). The yellow-breasted chat is a fairly common summer resident; nesting in low, dense riparian willow thickets with an understory of blackberry and wild grape along the stream banks. CNDDB records indicate that one occurrence was documented in 1979 along the Santa Clara River. This observation occurred within the thick riparian vegetation along the south bank, approximately 3 to 4 miles east of Piru, in Ventura County. CCL does not support suitable habitat for yellow-breasted chat; however, there is potential habitat for breeding along the Santa Clara River downstream of the landfill.

Yellow Warbler (Dendroica petechia brewsteri). This species is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). It breeds in riparian woodlands from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada mountain range. This species commonly utilizes mature riparian woodlands dominated by willow, cottonwood, sycamore, and alder for nesting and foraging. Historical records from the CNDDB indicate that one occurrence was documented in 1979 along the Santa Clara River. This observation occurred within the thick riparian vegetation along the south bank, approximately 3 to 4 miles east of Piru, in Ventura County. No breeding habitat is present at the landfill for this species; however, transient birds may utilize southern mixed chaparral communities at CCL during migration. In addition, suitable breeding habitat occurs along the Santa Clara River downstream.

Amphibians

Arroyo Toad (Bufo californicus). The arroyo toad is listed as endangered under the FESA and as a Species of Special Concern by CDFW (CDFW, 2011). This species was once found throughout coastal rivers and streams in Southern and Central California, from San Luis Obispo to San Diego counties, as well as in Baja California. It breeds almost exclusively in temporary pools and inhabits seasonally wet drainages with shallow, gravelly pools adjacent to sandy terraces. Arroyo toad adults and subadults are dependent on sandy stream terraces with cottonwood, willow, and sycamore (*Platanus racemosa*) canopy coverage for foraging and burrowing. Upland habitats are also used by arroyo toads during the non-breeding season. These habitats include alluvial scrub, coastal sage scrub, chaparral, grassland, and oak woodland (USFWS, 2000b).

No evidence of seasonal pooling of water was present within washes at CCL, which would be required to support a breeding population. Breeding populations from Castaic Creek may have historically utilized washes on the eastern portion of the landfill, but with the construction of the United States Postal Service facility southeast of the site, these washes are interrupted and separated by 1,500 to 2,000 feet of underground

culvert. This culvert is anticipated to be a movement barrier to arroyo toad, and the species is most likely absent from the vicinity of CCL.

Although occurrence at CCL is unlikely, there is potential for occurrence of the species downstream on Castaic Creek and the Santa Clara River, within the area of potential effects from CCL.

California Red-Legged Frog (Rana aurora draytonii). The California red-legged frog is listed as threatened under the FESA and as a California Species of Special Concern by CDFW (CDFW, 2011). This species requires riparian areas with slow-moving water or deep pools that support dense stands of emergent vegetation, such as cattails, at the edge of banks (Jennings, 1988). It inhabits quiet pools of streams, marshes, and sometimes ponds, with dense shoreline riparian or wetland vegetation. It may range in uplands, or aestivate in dense vegetation, leaf litter, or burrows when not in breeding watercourses. It is adversely affected by bullfrogs.

This species was documented in 2005 in the San Francisquito Creek (CDFW, 2012a). There is no documented occurrence of the California red-legged frog on the CCL site. It is likely that creek developments, including underground culverts, have effectively barred movement of this species at CCL. However, there is limited potential for habitat along reaches of the Santa Clara River downstream of the landfill property.

Coast Range Newt (Taricha torosa torosa). The coast range newt is recognized as a California Species of Special Concern by CDFW in areas south of Monterey (CDFW, 2011). This species breeds in slow moving streams and ponds with adjacent, intact terrestrial vegetation, along the western coast of California from Humboldt County to the Mexican border. The coast range newt typically feed on earthworms, insects, snails, and other small invertebrates (Stebbins, 1972). No CNDDB records occur for this species within 10 miles of CCL (CDFW, 2012a). Coast range newt is unlikely to occur at CCL due to lack of suitable habitat, but may occur downstream along the Santa Clara River.

Foothill Yellow-Legged Frog (Rana boylii). The foothill yellow-legged frog s recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species is associated with partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats (CDFW, 2012a). A historical record for this species was obtained from 1949 in an area north of Lake Piru (CDFW, 2012a). There is a lack of suitable habitat for this species within the Proposed Project area; therefore, it is unlikely that it will occur at CCL.

Western Spadefoot (Spea hammondii). The western spadefoot is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species occurs primarily in vernal pools for breeding and in grassland habitats in underground burrows. It can also occur in valley-foothill hardwood woodlands, coastal sage scrub, and chaparral. Rain pools must lack fish, bullfrogs, and crayfish in order for western spadefoot to successfully reproduce and metamorphose (Jennings and Hayes, 1994). Historical records from the CNDDB indicate that multiple occurrences have been documented in the vicinity of CCL between 2001 and 2004. In 2004, over 200 western spadefoot tadpoles were observed approximately 1 mile west of the Castaic Junction, and over 100 juveniles were recorded in the San Francisquito Creek area. The habitat utilized by the spadefoot consisted of rainfall-filled depressions and/or vernal pools. The east canyon and detention basin at CCL may hold water long enough to support breeding amphibians. Due to the presence of potential habitat, this species has a moderate potential to occur at CCL.

Reptiles

Belding's Orange-Throated Whiptail (Aspidoscelis hyperythra belding). The Belding's orange-throated whiptail is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species historically occupied low-elevation (Riversidean) coastal sage scrub, chaparral, and valley-foothill hardwood habitats. This species is presumably tied to perennial vegetation because its major food source, termites, requires perennial plants as a food base (Bostic, 1966). California buckwheat is an important indicator of favorable habitat for orange-throated whiptail (McGurty, 1981). No historical CNDDB records for this species occur within the vicinity of CCL, and no orange-throated whiptail were detected at CCL and the surrounding areas during field surveys. Although suitable habitat is present, this species does not occur in the CCL area.

California Legless Lizard (Anniella pulchra pulchra). The California legless lizard (also known as the silvery legless lizard) is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species commonly occurs in moist, sandy, and loose loamy soils under sparse vegetation of beaches, chaparral, pine-oak woodland, sycamores, cottonwoods, or oaks that grow on stream terraces, including dry washes (Zeiner et al., 1990b). They are known to prey upon insect larvae, termites, small adult insects, beetles, spiders, and other invertebrates (University of California, Riverside, 2001). This species has been documented within Plum Creek Canyon, but that site has been extirpated and individuals were relocated (CDFW, 2012a). Some habitat for this species occurs at CCL, and it is considered to have a moderate potential to occur.

Coastal Western Whiptail (Aspidoscelis tigris stejnegeri). The coastal western whiptail is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species occurs in coastal Southern California from Ventura County and south into Baja California. It is commonly found utilizing open rocky areas in a variety of habitat types such as coastal sage scrub and grasslands. Prey items of the western whiptail include termites, scorpions, solfugids, cockroaches, ant lion larvae, and various insect eggs, larvae, and pupae (Anderson, 1993). In general, foraging individuals are usually on the move, foraging in discrete patches and capturing sedentary, hidden prey, usually under perennials (University of California, Riverside, 2001). No historical CNDDB records for this species occur within the vicinity of CCL, and no coastal western whiptails were detected at CCL during field surveys. Rocky habitat and Riversidean sage scrub habitats occur within the vicinity of CCL, and it is anticipated that this species has a moderate potential of occurring.

San Diego Horned Lizard/Coast Horned Lizard (Phrynosoma blainvillei). The San Diego horned lizard is a California Species of Special Concern (CDFW, 2011). This species is restricted to southwest California and northwest Baja California, where it occupies coastal sage scrub and chaparral and other open habitats, including sandy washes. The San Diego horned lizard can be found in a variety of habitats from sage scrub to coniferous and broadleaf woodlands; however, it prefers areas with friable, rocky, or shallow sandy soils with open scrub for sunning and burrowing. Its preferred food is harvester ants. Historical records from the CNDDB indicate that one occurrence was documented within 5 miles of CCL in 1934, and recent records of this species have been documented in the Santa Susana Mountains and Tapia Canyon (CDFW, 2012a). This detection occurred south of Soledad Canyon in Saugus. Focused surveys were conducted in suitable habitat for San Diego horned lizards. No individuals or signs were observed; however, suitable habitat occurs at the landfill, including sandy wash areas with populations of harvester ants. Therefore, it is anticipated that the San Diego horned lizard has a moderate to high potential of occurring at CCL.

Two-Striped Garter Snake (Thamnophis hammondii). The two-striped garter snake is recognized as a California Species of Special Concern and protected by CDFW (CDFW, 2011). This species is highly aquatic, found in or near permanent and ephemeral fresh water, often in streams with rocky beds and dense riparian vegetation. It is sensitive to the presence of exotic species, including bullfrogs. CNDDB records indicate that one occurrence was documented within 5 miles of CCL in 2000. This detection occurred within the open channel of the Santa Clara River, between Salt Creek and Summer Four Crossings in nearby Ventura County. No two-striped garter snakes were detected during the course of field surveys. This species would not occur at CCL due to lack of aquatic habitat, but does occur within the area of potential impact downstream.

Western Pond Turtle (Emys marmorata). The southwestern pond turtle is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species breeds and forages in perennial watercourses with ample pool habitats and basking sites. It generally prefers watercourses with pools 2 or more feet deep. It lays eggs in upland areas adjacent to watercourses and spends summer aestivation periods in dense vegetation, shallow pits, or leaf litter in upland areas. Historical records from the CNDDB indicate that three occurrences were documented in 2000 within the open channel of the Santa Clara River (CDFW, 2012a). The most recent observation occurred in the vicinity of Las Brisas Bridge in Ventura County (CDFW, 2012a). This species would not occur at CCL due to lack of aquatic habitat, but does occur downstream.

Mammals

Big Free-Tailed Bat (Nyctinomops macrotis). The big free-tailed bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of moderate to high priority (CDFW, 2011). This species is rare in Southern California, with previous records restricted to urban areas in San Diego County. The big free-tailed bat is found in open and urban habitats, preferring rugged, rocky terrain. It forages in the air over water sources for large moths and other flying insects. This species roosts in rocky crevices high on cliff faces. Young are born into small nursery colonies in June and July and capable of flight in August to mid-September. Recent records identify a range extension into Los Angeles and Orange counties, with numerous records in the lower Los Angeles Basin (Constantine, 1998). The nearest detection is in Burbank in 1987, approximately 25 miles south-southwest of the landfill (Constantine, 1998). Potential for occurrence for this species on the site is possible but unlikely; there is a lack of records as far north as CCL.

California Leaf-Nosed Bat (Macrotus californicus). The California leaf-nosed bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of high priority (CDFW, 2011). This species ranges from Riverside, Imperial, San Diego, and San Bernardino counties south to the Mexican border, in desert riparian, desert wash, desert scrub, desert succulent scrub, alkali desert scrub, and other arid habitats. This species commonly roosts in mines and caves, generally far from human habitation. Historical records for this species occur for Bell Canyon, approximately 15 miles south of the landfill (Howell, 1920; Constantine, 1998), and in a small cave approximately 11 miles south-southwest of the landfill (Constantine, 1998). No records for this species are present in CNDDB for Los Angeles County; however, bat records in CNDDB are notoriously incomplete. Given the presence of this species in the region historically, it has potential to occur at CCL in suitable habitat, which may include small cave roost sites associated with outcrops in the area.

Cave Myotis (Myotis velifer). The cave myotis is recognized as a California Species of Special Concern by CDFW and a WBWG species of moderate priority (CDFW, 2011). This species is restricted in California, generally to lowlands of Colorado River and adjacent mountain ranges, in San Bernardino, Riverside, and Imperial counties. It is found in desert scrub, desert succulent shrub, desert wash, and desert riparian. This species is a colonial, cave-dwelling bat, but may also roost in rock crevices or old buildings, under bridges, and in abandoned cliff swallow nests. Three detections of this species were reported for Los Angeles County between 1992 and 1997, one of which was located within the general vicinity of CCL in Valencia in 1994 (Constantine, 1998). Potential for occurrence for this species on the site is unlikely but possible. However, no records for this species are present in CNDDB in the vicinity of CCL and this species exhibits spotty occurrence patterns west of Riverside County.

Long-Eared Myotis (Myotis evotis). The long-eared myotis is recognized as a WBWG species of moderate priority (CDFW, 2011). This species is a yearlong resident throughout California, absent only from the Central Valley and Mojave Deserts; it seems to prefer higher elevation coniferous forests. It preys on flying insects and forages on the ground or in vegetation. The species roosts in trees, rock crevices, buildings, and caves, as well as under tree bark. Nursery colonies may number 12 to 30 individuals. Young are born in May to July, with a peak in June. Young are flying by early August. Museum records for this species have been documented for Los Angeles County in the Pasadena area, approximately 30 miles southwest of the landfill (Garrett, 1993). CNDDB records for this species are limited to a handful of records in Central and Northern California. CCL appears to provide moderate roosting habitat for the species, which may utilize crevices or small caves in rocky outcrops and cliffs, and the potential for occurrence within the site is moderate to high.

Long-Legged Myotis (Myotis volans). The long-legged myotis is recognized as a WBWG species of high priority (CDFW, 2011). It is a yearlong resident throughout California, absent only from the Central Valley and Mojave Deserts. It is most common in forested areas above 4,000 feet, but also found in coastal scrub, chaparral, and woodlands. It roosts in rock crevices, buildings, and under tree bark. It preys on flying insects, and may forage over water, scrub, or woodland habitats. Young are born in June and July, may begin flying in mid-July, and are weaned by September. Museum records for this species have been documented for the Pasadena area, approximately 35 miles southeast of the landfill (Garrett, 1993). There are no CNDDB records in the general vicinity of CCL for this species. CCL appears to provide moderate roosting habitat for the species, which may

utilize crevices or small caves in rocky outcrops and cliffs, and the potential for this species to occur within the site is moderate to high.

Mexican Long-Tongued Bat (Choeronycteris mexicana). The Mexican long-tongued bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of high priority. The Mexican long-tongued bat was formerly known only from San Diego County, but more recent records occur from Los Angeles and Ventura counties (Constantine, 1998). This species roosts in caves, mines, and buildings; and prefers dimly lit sites. The Mexican long-tongued bat primarily feeds on nectar, pollen, and occasionally fruit while hovering. Pregnant females have been found from February through September. Most births occur in June and early July; and this species is wary and very sensitive to roost sites disturbances. Low potential for occurrence for this species on the site is possible. However, no records for this species are present in CNDDB in the vicinity of CCL and it has spotty occurrence potential north of San Diego County.

Pallid Bat (Antrozous pallidus). The pallid bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of high priority (CDFW, 2011). This species is a yearlong resident throughout lower elevations of California, utilizing open, dry habitats from grasslands, open scrub, shrublands, woodlands, and forests. It typically forages close to the ground and may take prey on the ground. Day roosts are typically in caves, crevices, mines, buildings, and hollow trees. The species is social, often roosting in groups of 20 or more, ranging to well over 100, in many cases with other species; however, it may also be found individually (Zeiner et al., 1990c). Maternity colonies form in early April, and may contain from 12 to 100 individuals. Young are weaned in 7 weeks, and are observed flying in July and August. There is one record for this species in CNDDB from 1938, within 1 mile of CCL; and given the wide range of this species, and preference for open, dry habitats, there is moderate potential for this species to occur within the site.

Pocketed Free-Tailed Bat (Nyctinomops femorasaccus). The pocketed free-tailed bat is designated a California Species of Special Concern by CDFW and a WBWG species of moderate priority (CDFW, 2011). It is a common resident of arid regions of Southern California, occurring in desert scrub, riparian, and other habitats. It was formerly considered limited to Imperial and San Diego counties. Pocketed free-tailed bats roost in small groups in rock crevices on cliff faces. It catches prey in flight, foraging over ponds, streams, or open habitat. Young are born in June and July, and weaned by late August for this species. Constantine (1998) reports numerous records of this species in Los Angeles County, taken from data collected from 1954 to the late 1990s. The closest observation of this species by Constantine occurred in 1994, approximately 36 miles south-southwest of CCL within the city of Inglewood; this represents a known range extension, and is among the farthest north records of the species. Potential for occurrence for this species on the site is possible but very unlikely.

San Diego Black-Tailed Jackrabbit (Lepus californicus bennettii). The San Diego black-tailed jackrabbit is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species ranges from coastal Southern California, from Santa Barbara County into northwest Baja California. It is commonly found in coastal sage brush and Riversidean sage scrub habitats with intermediate canopy stages, open spaces, and herbaceous edges. No CNDDB records occur for this species within 5 miles of CCL. The San Diego black-tailed jackrabbit was not observed at CCL during field surveys; however, suitable habitat does exist, and there is potential for occurrence within the site.

San Diego Desert Woodrat (Neotoma lepida intermedia). The San Diego desert woodrat is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). This species occurs within arid regions up to 8,500 feet above msl from San Luis Obispo to northwest Baja California. The San Diego desert woodrat occupies moderate to dense canopy chaparral, Riversidean sage scrub, woodlands, rocky outcrops, and rocky slopes. Desert woodrats are primarily herbivorous, and their diet may include leaves, seeds, berries, parts of flowers, and yucca shoots (Cameron and Rainey, 1972). No CNDDB records occur for this species within 5 miles of CCL. Woodrat nests were identified at CCL during field surveys; however, it could not be determined if they belonged to this subspecies or to the close relative, the dusky-footed woodrat (*N. fuscipes*). Potential exists for the species' occurrence at CCL in chaparral habitat, particularly where rocky outcrops are present.

Spotted Bat (Euderma maculatum). The spotted bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of high priority (CDFW, 2011). The spotted bat is rare, ranging through Central and Southern California desert, scrub, and woodland habitats. It roosts in high cliff faces and rock crevices. It feeds almost exclusively on medium-sized moths, beetles, and caddis flies. Historical records from the CNDDB indicate that one deceased individual was found in 1890 within 5 miles of CCL. Potential for occurrence for this species on the site is possible, but unlikely, and there is a lack of preferred roosts (high cliff faces).

Townsend's Western Big-Eared Bat (Corynorhinus townsendii townsendii). The Townsend's western big-eared bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of high priority (CDFW, 2011). This species is a yearlong resident throughout California, but is generally quite rare, with numbers having declined steeply. It utilizes open, mesic habitats, foraging for moths, beetles, and other insects by echo-location or gleaning from foliage. It roosts in caves, mines, tunnels, and dark building caverns, generally preferring larger enclosures. Maternity colonies are typically fewer than 100 bats and are sensitive to disturbance. Maternity colonies form in April, with births in May or June; colonies may begin to break up by August. Limited records of this species are present in CNDDB for California, consisting of a handful of records in Central and Northern California, although it is commonly reported as occurring throughout California. Recent records occur from Santa Cruz Island (Constantine, 1998). CCL may be within range of the species and occurrence potential is possible, but unlikely. This species has a strong preference for larger roosts in caves, mines, or abandoned buildings, which are lacking within CCL.

Western Mastiff Bat (Eumops perotis californicus). The western mastiff bat is recognized as a California Species of Special Concern by CDFW and a WBWG species of high priority (CDFW, 2011). This species is an uncommon resident of interior and coastal regions of Central and Southern California, occurring in a variety of open, arid habitats. The species roosts in cliff faces, high buildings, tees, and tunnels; nursery roosts are described as tight rock crevices at least 3 feet deep and 2 inches wide. It catches prey in flight, foraging over various habitats. Parturition dates vary more for this species than other species, and may occur from April through August or September. Constantine (1998) reports numerous records of this species from Los Angeles County, including records from the general vicinity of CCL. Garrett (1993) also reports museum records from Los Angeles County. Given the broad habitat usage of this species and frequency of occurrence records in the region, there is a high likelihood of occurrence at CCL.

Yuma Myotis (Myotis yumanensis). The Yuma myotis is designated a WBWG species of low to moderate priority (CDFW, 2011). This species is a yearlong resident and generally common throughout California. It roosts in trees, rock crevices, buildings, caves, mines, and abandoned swallow nests under bridges, as well as under tree bark and under bridges. It preys on flying insects, generally foraging over water sources. Nursery colonies may number several thousand individuals. Young are born in May to mid-June, with a peak in early June. Limited records of this species are present in CNDDB for California, consisting of a handful of records in Central and Northern California. CCL appears to provide moderate roosting habitat for the species, which may utilize crevices or small caves in rocky outcrops and cliffs, and the potential for occurrence within the site is moderate.

Fish

Arroyo Chub (Gila orcutti). The arroyo chub is recognized as a California Species of Special Concern by CDFW (CDFW, 2011). It prefers slow-moving or backwater sections of warm to cool streams with substrates of sand or mud with a typical stream depth of greater than 40 centimeters (Moyle, 1976). This species is common at various locations throughout Southern California (University of California, Riverside, 2001; Swift et al., 1993). CNDDB records indicate that multiple occurrences were documented between 1993 and 2005 in the Santa Clara River, approximately 3 miles east of Piru, from the Las Brisas Bridge to Old Road Bridge with the majority of the fish observed in the lower one-third of the area (CDFW, 2010a). This species would not occur at CCL due to lack of aquatic habitat, but apparently occurs downstream.

Santa Ana Sucker (Catostomus santaanae). The Santa Ana sucker is listed as a federally threatened species under the FESA and a California Species of Special Concern by CDFW (CDFW, 2011). The historical range of the Santa Ana sucker includes the Los Angeles, San Gabriel, and Santa Ana River drainage systems in Southern

California (Smith, 1966). An introduced population also occurs in the Santa Clara River drainage system (Moyle, 1976). The Santa Ana sucker generally occurs in shallow streams less than 20 feet in width with preferred substrates characterized by sand-rubble-boulder with cool, clear water and a presence of filamentous algae. It appears to be most abundant where the water is cool, clean, and clear, although the species can tolerate seasonally turbid water (University of California Riverside, 2001).

CNDDB records indicate that multiple occurrences were documented on the Santa Clara River in the vicinity of CCL between 1975 and 2004. In 2004, an individual was observed within the Santa Clara River drainage from San Francisquito Canyon to the vicinity of Santa Paula. In 2007, Santa Ana suckers were common observations in the Santa Clara River, from Santa Paula to Valencia, and 39 dead individuals were observed in October 2007. No critical habitat has been designated for the Santa Ana sucker. This species would not occur at CCL due to lack of aquatic habitat, but does occur downstream.

Southern Steelhead Trout (Oncorhynchus mykiss irideus). The southern steelhead trout is listed as a federally endangered species under the FESA and a California Species of Special Concern by CDFW (CDFW, 2011). The historical range of this species in North America includes Pacific Coast streams from Alaska, south to northern Baja California (Bernstein and Montgomery, 2008). In 2005, the Santa Clara Calleguas Hydrological Unit was designated as critical habitat, as far east as Piru Creek (78 *Federal Register* 2725). The southern steelhead trout has been documented within the Fillmore quadrant (CDFW, 2010a). This species would not occur at CCL due to lack of aquatic habitat, but does occur downstream in the Santa Clara River.

Unarmored Threespine Stickleback (Gasterosteus aculeatus williamsoni). The unarmored threespine stickleback is listed federally and state endangered and is Fully Protected by CDFW (CDFW, 2011). This species once occurred throughout the Los Angeles, San Gabriel, and Santa Ana River systems (Culver and Hubbs, 1917). By 1985, the only known population was restricted to a small portion of the upper Santa Clara River drainage in Los Angeles County and the San Antonio Creek drainage in Santa Barbara County (Center for Biological Diversity, 2002). The unarmored threespine stickleback is a small, scaleless, freshwater fish that requires slow-moving and clean, clear waters of streams and rivers. This species forages on small aquatic organisms, primarily insects, crustaceans, and algae. Breeding occurs in late spring and early summer with the male building a nest with grass and sticks on the bottom of the creek, concealed in holes or debris.

CNDDB records indicate that multiple occurrences were documented between 1994 and 2000 in the Santa Clara River, approximately 3 miles east of Piru, upstream to the McBean Bridge crossing in Valencia. In 2000, a total of 42 individuals were recorded in the Santa Clara River. The most recent occurrence was in 2005, when one individual was observed in Castaic Creek, 0.80 miles north of the junction of SR-126 and I-5. The unarmored threespine stickleback is known to be a year-round resident of the Santa Clara River from the confluence of the Santa Clara River and Castaic Creek to I-5 (San Marino Environmental Associates, 1995). SEA #23 has been developed along the Santa Clara River by the County of Los Angeles to protect unarmored threespine stickleback. The Santa Clara River is also designated as “unarmored threespine stickleback stream” by CNDDB. This species would not occur at CCL due to lack of aquatic habitat, but does occur downstream.

Invertebrates

San Emigdio Blue Butterfly (Plebulina [Plebeius] emigdionis). This butterfly is of local conservation concern. Its range extends throughout Southern California from Inyo County to northern Los Angeles County, generally occurring in shadscale scrub in desert canyons and washes. The larval hostplant is shadscale (*Atriplex canescens*). There are no known records in the vicinity of CCL; nearby records occur in Bouquet and Mint Canyons (United States Geological Survey, 2002). Shadscale scrub has been observed at CCL, although it is generally outside its desert canyon range; therefore the species is not anticipated to occur.

8.5.6 Oak Trees

A field study evaluation of Los Angeles County ordinance-sized oak trees was conducted by SB Horticulture in early April 2012 to ascertain baseline data in regard to native oak tree resources in the Proposed Project area

(SB Horticulture, 2014). The Oak Tree Report is included in Appendix D2, and results of the survey are summarized here:

- Two oaks, one valley oak and one coast live oak, are native trees growing adjacent to an abandoned field previously used for agriculture purposes.
- Two coast live oaks are landscape trees growing within landscaped areas of the existing landfill facility.
- All four trees subject to the Los Angeles County Oak Tree Ordinance will be removed for the Proposed Project.

8.5.7 Wildlife Corridors

Wildlife movement corridors maintain habitat connectivity across natural community boundaries. Corridors may support daily movement from one foraging habitat to another, to watering holes, denning or roosting sites, or seasonal movements including large-scale migrations. Wildlife corridors may be represented by linear habitats such as aquatic streams or rivers, riparian woodlands along stream courses, or continuous or interconnected patches of natural habitat surrounded by other types of habitat (such as woodland habitat on hillsides surrounded by lowland grasslands) or natural habitat surrounded by developed land (such as chaparral surrounded by urban or agricultural land). Movement corridors may also be represented by ridgelines, valleys, or other less tangible features where wildlife congregate during daily or seasonal movements. Active wildlife corridors or major seasonal movement corridors were not observed at CCL, but no long-term quantitative study of wildlife movement has been done. Generally, such studies are intensive and may require many years of observations. However, evidence of consistent wildlife movement along the ridgeline north of the active landfill area was observed during June 2010 field surveys. Evidence included wildlife trails and regular observations of scat (e.g., coyote, gray fox).

The South Coast Wildlands Missing Linkage Project (South Coast Wildlands, 2008) defined the Santa Monica - Sierra Madre Connection, a north-south linkage from Santa Monica Mountains along the coast to the Santa Susana Mountains and the Sierra Madre Ranges of Los Padres National Forest. It is one of the few coastal to inland connections remaining in the South Coast Ecoregion. The border of this linkage is about 2 miles to the west of CCL near the Ventura County line. Within this linkage, U.S. Route 101 and State Routes (SR) 23, 118, and 126 are the most obvious barriers between core reserves in the Santa Monica and Sierra Madre mountains, while Interstate 5 (I-5) and SR-14 impede movement to the San Gabriel Mountains to the east. Although movement through the CCL could contribute or be a part of this corridor, it is unlikely that it would be significant given the existing barriers and proximity to existing development.

8.6 Potential Impacts

8.6.1 Impacts Definition

Direct impacts occur when biological resources are altered, disturbed, destroyed, or removed during the course of construction, grading, and filling of habitats. Direct impacts can include the loss of individuals or populations from habitat clearing or construction-related mortality; loss of foraging, nesting or burrowing habitat for wildlife species; or alteration of substrates, which prevents reestablishment of native vegetation.

Indirect impacts occur when project-related activities affect biological resources in a less overt manner. Such impacts include elevated noise and light levels, erosion of hillsides and/or sedimentation and siltation of aquatic habitats, and production of fugitive dust emissions.

Both direct and indirect impacts can be classified as either temporary or permanent, depending on the duration of the impacts. Temporary impacts are impacts considered to have reversible effects on biological resources. Examples of temporary impacts include noise and light generated from construction activities, production of fugitive dust emissions during construction, and construction traffic. Permanent impacts are those impacts resulting in the irreversible removal, disturbance, or destruction of biological resources.

The Proposed Project would result in both direct and indirect impacts to biological resources that might be either permanent or temporary in nature.

In determining if these impacts are significant to plant and wildlife species, the actual and potential occurrence of the species at CCL is correlated with the significance criteria defined below.

8.6.2 Criteria for Determining Significance/Standards of Significance

The following summarizes thresholds of significance for impacts to biological resources, based on Appendix G (Environmental Checklist Form) of the CEQA Guidelines Section 15000 et seq.; these thresholds are used to determine the level of significance for this study and analysis. Levels of significance or effect include the following: (1) no impact or effect; (2) adverse impact but less than significant; (3) beneficial impact; (4) significant adverse impact but with mitigation reduced to less than significant; (5) unavoidable significant adverse impact; and (6) cumulative impact. A significant adverse impact is defined as one or more of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pools, and coastal areas) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCP.

8.6.3 Proposed Project Construction Impacts

Potential impacts to biological resources as a result of the Proposed Project are described below.

8.6.3.1 Potential Impacts to Vegetation Communities

Potential Impacts

The Proposed Project would result in approximately 276 acres of permanent vegetation impacts throughout the life of the landfill. The acreage of impacts by vegetation community type includes Dry Wash (2.2 acres), Dry Wash Mule Fat Dominant (7.1 acres), Mixed Riversidean Sage Scrub/Non-Native Grassland (34.9 acres), Non-Native Grassland (47.6 acres), Non-Native Grassland with Scattered Shrubs (42.8 acres), Ruderal (10.7 acres), Riversidean Sage Scrub (117.5 acres), and Southern Mixed Chaparral (13.6 acres).

Ground-disturbing activities may also promote the establishment of invasive plant species and noxious weeds and potentially degrade surrounding communities. To minimize potential for introduction of invasive plant species during construction, the Proposed Project will include contract requirements to ensure vehicles are clean and free of soil or invasive weed seeds and other plant parts prior to entering the site. Construction contractors hired by CCL will have to certify in writing that their equipment meets these requirements. Invasive species may include any species on Los Angeles County's invasive plant list (http://planning.lacounty.gov/assets/upl/project/green invasives2011.pdf) or any species listed as moderate or high on the California Invasive Plant Council (Cal-IPC) list (http://www.cal-ipc.org/ip/inventory/).

Additionally, within 1 year of Project approval invasive tamarisk (*Tamarix* spp.) located onsite will be identified and removed completely and the area will be re-planted with appropriate riparian vegetation.

Native vegetation communities such as Riversidean coastal sage scrub and southern mixed chaparral have a relatively high biological value, and along with non-native habitats on the site, provide nesting, foraging, roosting, and denning opportunities for many species of wildlife. However, extensive areas of these communities are present in the region. The impact of loss or degradation of these habitats, even though deemed as adverse, is anticipated to be less than significant, given the small acreage of impacts and availability of alternate large areas of similar habitat, both locally in the Santa Clarita Valley area and regionally in Los Angeles County. In addition, landfill areas would be revegetated with native vegetation when retired from use, offering some compensation from habitats lost from the Proposed Project, and further reducing impacts. With mitigation, potential impacts to vegetation communities would be less than significant.

Mitigation Measures

BR-1 A Revegetation Plan for the Project will be developed in consultation with LADRP. In order to replicate and potentially expand the available amount of Southern Mixed Chaparral vegetation community at the site, the Revegetation Plan will include a final soil cover of approximately 5 feet, or alternatively a depth approved by regulatory agencies and suitable to allow for proper root growth. If the cover is deemed infeasible by capacity constraints or other conditions, offsite mitigation land will be purchased to offset the loss of approximately 14.4 acres of Southern Mixed Chaparral vegetation community. The acreage acquired will, if feasible, be generally local to the site or the general site area, ideally situated adjacent to or in the general proximity of the Santa Clara River, Hasley Canyon, or Angeles National Forest, and will connect with other protected open space.

BR-2 Preconstruction surveys by qualified biologists shall be conducted for special-status species in impact areas prior to ground-disturbing activities, and if necessary and feasible, resource relocation or exclusion shall be implemented. Resource relocation shall be conducted by qualified biologists in coordination with CDFW or USFWS. Exclusion zones shall be implemented with fencing and/or signage that restricts access.

- For rare plants, this shall include focused surveys by a qualified botanist conducted during the appropriate season for detection (generally during flowering period) the first season prior to ground-disturbing activities over the entire disturbance area proposed for the Project, and then again over the entire area remaining to be disturbed for each phase (cell) of landfill development. If suitable transplant areas for rare plants exist at CCL, surveys will also include potential areas for relocation onsite in order to provide background data for determining transplant success. If no suitable relocation areas exist at CCL, potential mitigation areas in conserved areas within the local watersheds will be identified and surveyed at the same time in order to have background data. Surveys shall follow standard survey protocol for rare plants outlined in Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS, 2000a).
- If special-status plants are found at CCL, they shall be avoided, when feasible. To avoid impacts to special-status plants, protective measures, such as the installation of an orange plastic fencing surrounding plant or plant population and the restriction of construction activity within these protected areas shall be implemented.
- If a sensitive plant (including species of CNPS RPR 1-4) is detected during rare plant surveys in an area identified for disturbance, consultation with CDFW will be initiated and will result in preparation of a rare plant report for review by CDFW and LADRP. Mitigation by transplantation will take place before any clearing or grading of the sensitive plant occurs. CDFW will approve the transplantation program, including methods, monitoring, reporting, success criteria, adaptive management, and contingencies.

BR-3 Construction and construction monitoring for animals will occur at discrete time periods. Construction monitoring shall be conducted in areas containing native vegetation at the time of construction activity within the limit of active construction disturbance. Within areas containing native vegetation, ground-disturbing activities shall be prohibited until the area is cleared by a qualified biological monitor during a preconstruction survey up to seven days prior to the beginning of cell construction activities. Biological monitors shall also monitor construction activities within 100 feet of avoided CDFW and USACE jurisdictional drainages.

BR-4 The construction area boundaries shall be delineated clearly. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside of the designated construction area. In addition, CCL ingress and egress routes shall be marked, and vehicle traffic outside these routes shall be prohibited. Vehicular traffic shall adhere to a speed limit of 15 miles per hour on non-public access roads during construction to ensure avoidance of impacts to sensitive biological resources.

BR-5 Soil or invasive plant seed transfer from clothing, shoes, or equipment shall be minimized through cleaning and monitoring of personnel or equipment transfers between sites, or prior to initial entry at CCL. Contract requirements to ensure vehicles are pressure washed and/or clean and free of soil or invasive weed seeds and other plant parts prior to entering the site will be implemented. Contracts will specify that pressure-washing of construction vehicles is to take place immediately before bringing the vehicle to CCL. The contractor will provide written documentation that the vehicles have been pressure washed or otherwise free of plant material that is checked by both CCL management and the biological monitor, who will jointly assure that this mitigation is implemented. The biological monitoring report will include a record of compliance with this measure.

Within 1 year of Project approval invasive tamarisk (*Tamarix* spp.) located onsite will be identified and removed completely. Removed tamarisk will be disposed of in a landfill.

BR-6 Only vehicles that meet fire safety requirements shall be allowed on the construction sites. Camping, trash-burning fires, and warming fires shall be prohibited in the construction area.

BR-7 A mitigation monitoring plan that outlines how mitigation measures specified herein shall be implemented and monitored shall be prepared and approved by LADRP prior to award of any grading permit. The Plan will address mitigation for special-status plants, including management of salvaged topsoil, relocation of offsite property that could serve as permanent open space areas or a conservation easement. The Plan shall include methods, monitoring, reporting, success criteria, adaptive management, and contingencies.

8.6.3.2 Potential Impacts to CDFW and USACE Jurisdictional Areas

Potential Impacts

USACE and CDFW jurisdictional areas could potentially be permanently impacted from grading and filling activities. Prior to initiation of permitting, a delineation report would be prepared to identify the presence of jurisdictional areas. In the event that any jurisdictional areas are confirmed at CCL, potential losses would include riparian vegetation associated with seasonal washes, including mule fat scrub, Mexican elderberry, and potentially scattered Fremont cottonwood. The permanent loss of CDFW and USACE jurisdictional areas would be considered a significant impact. Impacts would be quantified during the permitting process and mitigation for potential impacts would be required as a part of the permitting process.

Additional impacts may potentially occur in waterways from construction or operational changes to water quality. Multiple BMPs address stormwater management and sediment capture to reduce impacts to water quality, as provided below as mitigation measures. Permanent sediment basins are present along all drainages at CCL prior to discharging offsite. These basins capture and retain water quality contaminants with sediments. CCL provides periodic clearing and cleaning of sediment basins. Contaminants captured within these basins are

carried away and disposed of within portions of the landfill during maintenance. The operation and maintenance of these basins provides additional mitigation for water quality impacts.

With mitigation, potential impacts are anticipated to be less than significant.

Mitigation Measures

BR-3 shall be implemented.

BR-8 For potential impacts to jurisdictional waters, permits shall be obtained for the Proposed Project from USACE (Section 404, CWA) and CDFW (SAA, Section 1603); conditions of these permits would be complied with for the Proposed Project. The terms and conditions of these permits are anticipated to require mitigation consistent with "Compensatory Mitigation for Losses of Aquatic Resources; Final Rule" (USACE, EPA, Federal Register, April 10, 2008), and with CDFW requirements for SAAs. A mitigation plan may be required prior to permit issuance.

BR-9 Stationary equipment such as motors, pumps, generators, and welders shall be located a minimum of 50 feet outside CDFW and USACE jurisdictional drainages where impacts have not been permitted. Construction staging areas, stockpiling, and equipment storage shall be located a minimum of 50 feet outside non-permitted CDFW and USACE jurisdictional drainages.

BR-10 Construction vehicles and equipment shall be checked periodically to ensure they are in proper working condition and that there shall be no potential for leaks. Refueling or lubrication of vehicles and cleaning of equipment, or other activities that involve open use of fuels, lubricants, or solvents, shall occur at least 100 feet away from CDFW and USACE jurisdictional drainages where impacts have not been permitted, and at least 50 feet from other flagged, sensitive biological resources.

BR-11 Best management practices will be implemented during construction to prevent sediment from entering into non-permitted jurisdictional drainages. Existing sedimentation basins prevent sediment-laden water from draining offsite.

BR-12 Only agency-approved pesticides, herbicides, fertilizers, dust suppressants, or other potentially harmful materials shall be applied at CCL, in accordance with relevant state and federal regulations. Rodenticides will not be used. Instead, methods that do not persist and infiltrate the natural food chain will be used for pest elimination such as trapping, gassing, etc. Sediment basins are present along all drainages at CCL, which capture runoff prior to discharging offsite. Sediment basins will continue to be regularly maintained.

8.6.3.3 Potential Impacts from Nuisance Wildlife

Landfill operation may result in the introduction and success of nuisance wildlife, including gulls, ravens, brown-headed cowbirds, common starlings, and rats (*Rattus* spp.). These species can displace native wildlife. Negative impacts from vectors and nuisance wildlife in general would be reduced through the implementation of the mitigation measure described below. Implementation of the measure would ensure that potential impacts from nuisance wildlife are less than significant.

Mitigation Measures

BR-13 Construction sites and landfill operation shall be kept free of trash and litter. Food-related trash and litter shall be placed in closed containers and disposed of daily. Nuisance wildlife breeding will be discouraged at CCL by excluding cavities in buildings and/or equipment or facilities left idle for more than 6 months.

8.6.3.4 Potential Impacts to Special-Status Plant Species

Potential Impacts

Federal- and state-listed plant species that could occur in the vicinity of CCL include Braunton's milk-vetch, California orcutt grass, San Fernando Valley spineflower, and slender-horned spineflower. Database analyses

indicate limited distribution of these species in the vicinity of CCL. However, there is a limited potential for occurrence of some of the special-status plants at CCL, based on the presence of suitable habitat including Riversidean coastal sage scrub and southern mixed chaparral. If individual federal- and state-listed plant species are present at CCL, they may be lost as a result of the Proposed Project, including construction-related impacts from grading and filling activities. This would represent a significant impact.

CNPS List Category 1A and 1B plant species include Los Angeles sunflower, Plummer's mariposa lily, short-tailed beavertail, and slender mariposa lily. Database analyses indicate limited distribution of these species in the vicinity of CCL. However, due to the presence of southern mixed chaparral and Riversidean coastal sage scrub habitat at the landfill, these species could occur. If sizable populations of Category 1B plants are found at the landfill, loss from the Proposed Project would be considered a significant impact.

Rayless ragwort is a Category 2 plant species with potential for occurrence in the vicinity of CCL. Due to the absence of alkaline soils at the landfill, it is unlikely this species occurs. Database analysis reveals very limited distribution in the vicinity of CCL. Because of the low probability of occurrence, no impacts to this species are anticipated from the Proposed Project, and no mitigation measures are required.

Preconstruction rare plant surveys would be conducted under Mitigation Measure BR-1; if rare plants are identified, the area would be avoided as feasible. However, some rare plants may be identified in areas that cannot be effectively avoided. Where this occurs, loss from the Proposed Project would be a significant impact. BR-113 below is specifically provided to address this contingency. Since it is unknown what plants, if any, would be found prior to surveys, consultation with appropriate regulatory agencies and specialists in conservation of the identified species will identify potential for appropriate salvage and relocation of soil or seeds, or purchase of mitigation credits or offsite property.

With the implementation of specific mitigation measures, the impacts to special-status plants would be reduced to below the level of significance.

Mitigation Measures

BR-1, BR-2, BR-3, BR-4, BR-5, and **BR-7** will be implemented.

BR-14 Mitigation to reduce unavoidable impacts to special-status plants identified during the preconstruction surveys shall be coordinated with and approved by USFWS and CDFW and could include one or more of the following:

- Salvaging of topsoil to store the seedbank for later spreading of the soil at a suitable location offsite or onsite
- Relocation of the plant(s) to a suitable location offsite by a qualified botanist
- Purchase of mitigation credits or offsite property with known populations of the affected species for inclusion in permanent open space areas or a conservation easement

8.6.3.5 Potential Impacts to Special-Status Wildlife Species

The Proposed Project would result in the loss of habitat for several special-status wildlife species expected to occur at CCL. For those species not observed but expected to occur at CCL, potential impacts were evaluated based on the habitat for which the species is expected to occupy.

For aquatic species (fish and amphibians), downstream effects to the aquatic habitats, primarily through potential impairment of water quality in Castaic Creek and Santa Clara River, are evaluated.

A number of species that may occur in the general vicinity of CCL are unlikely to occur within the area of potential effects for the landfill, either on or near CCL or along areas of potential downstream effects. These species are listed in Table 8-3 as unlikely to occur within the area of potential effects. No impact is anticipated to these species from the Proposed Project, and they are not addressed further.

8.6.3.6 Potential Impacts to Downstream Water Quality

Potential Impacts

The Santa Clara River downstream of the Proposed Project has, as stated, Beneficial Uses, warm freshwater habitat (WARM), wildlife habitat (WILD), rare/threatened/endangered species (RARE), and wetland habitat (WET). Special-status fish species that occur downstream of CCL include arroyo chub, Santa Ana sucker, southern steelhead trout, and unarmored threespine stickleback; all are known to occur in portions of the Santa Clara River or Castaic Creek. Additional special-status amphibians may occur downstream including California red-legged frog, coast range newt, southwestern arroyo toad, and western spadefoot. Aquatic reptiles are also documented to occur downstream, including southwestern pond turtle and two-striped garter snake.

Erosion and Sedimentation. Chapter 6.0 addressed surface water impacts for the Proposed Project. As described in Chapter 6.0, the precipitation drainage and control system for the Proposed Project will be designed and constructed to carry the peak discharge resulting from the 100-year 24-hour storm event as required by Title 27, and the stormwater runoff volume resulting from the Capital Flood event (50-year, 24-hour storm) as required by LACDPW. Because CCL has stormwater retention/detention basins to control sedimentation and runoff, the Proposed Project would not result in direct impacts to riparian habitats or streambanks of downstream watercourses.

Urban Runoff. Permanent indirect impacts from increased urban runoff into the drainage system occur when there is an increase in impervious surface as a result of landfill buildout (infrastructure areas), including contribution of pollutants, which may include petroleum and chemical products from equipment or vehicles, and other hazardous substances. The stormwater retention/detention basins at CCL serve to prevent runoff from the site except during extreme weather events. Current runoff from the landfill and surrounding areas into the onsite stormwater retention/detention basins is primarily limited to sediment and oil and grease from equipment or vehicles. Common urban runoff constituents such as pesticides, herbicides, dust suppressants, and fertilizers are not typically used at CCL.

Chapter 6.0 addressed surface water impacts for the Proposed Project. As described in Chapter 6.0, the precipitation drainage and control system for the Proposed Project will be designed and constructed to carry the peak discharge resulting from the 100-year 24-hour storm event as required by Title 27, and the stormwater runoff volume resulting from the Capital Flood event (50-year, 24-hour storm) as required by LADPW.

Chapter 7.0 addressed Water Quality impacts for the Proposed Project, including impacts to downstream receiving waters. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality, including those associated with urban runoff.

Mitigation Measures

Although no offsite impacts associated with erosion and sedimentation or urban runoff anticipated, previously proposed mitigation measures **BR-7, BR-9, BR-10, BR-11, and BR-12** shall be implemented**.**

8.6.3.7 Potential Impacts to Special-Status Amphibians

Potential Impacts

California Red-Legged Frog. CCL does not support suitable breeding habitat for the California red-legged frog, which requires riparian areas with ponds or slow-moving waters with dense emergent vegetation. In addition, underground culverts that separate the landfill from the nearest adjacent habitat at Castaic Creek would generally preclude movement or dispersal of red-legged frogs onto the site. Therefore, no direct impacts from the Proposed Project to the red-legged frog are anticipated. Critical habitat is designated to the northeast of the landfill, but the Proposed Project would not impact the critical habitat. Potential for downstream changes in water quality that could affect red-legged frog are addressed in Chapters 6.0 and 7.0 of this Draft Environmental Impact Report (DEIR).

Arroyo Toad. CCL does not support seasonally ponded waters sufficient to last a minimum of 60 to 90 days, which would be required to support breeding populations of arroyo toad. The nearest breeding habitat for the arroyo toad is along Castaic Creek and the Santa Clara River downstream of CCL. Surface flows were channelized into underground culverts during the construction of the United States Postal Service facility southeast of the landfill. This channelization poses a daunting physical constraint for any movement onto CCL. In addition, there are no records of occurrence for arroyo toad within Castaic Creek adjacent to CCL. Records do occur farther upstream on Castaic Creek, or nearby on the Santa Clara River. Given these conditions, the species is presumed absent from CCL, and no direct impacts to arroyo toad are anticipated.

Designated critical habitat for this species occurs along Castaic Creek down to its confluence with Santa Clara River. However, the Proposed Project would not impact critical habitat. Potential for downstream changes in water quality that could affect arroyo toad are addressed in Chapters 6.0 and 7.0 of this DEIR.

Coast Range Newt. No aquatic habitat or seasonal pools are present at CCL that would support coast range newt; as such, there would be no impact to this species from the Proposed Project. The east canyon and detention basin at CCL may hold water long enough to support breeding amphibians; however, the east canyon and detention basin at CCL are not considered suitable for coast range newt due to the lack of vegetation. Therefore this species has a low probability to occur at CCL, but may occur downstream along the Santa Clara River.

Potential for downstream changes in water quality that could affect this species are addressed in Chapters 6.0 and 7.0 of this DEIR. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion of surface runoff and offsite drainages will not be altered. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality.

Western Spadefoot. Potential aquatic habitat/seasonal pools are present at CCL that could support western spadefoot. The east canyon and detention basin at CCL may hold water long enough to support breeding amphibians. Therefore this species has a moderate potential to occur at CCL.

Potential for downstream changes in water quality that could affect these species are addressed in Chapters 6.0 and 7.0 of this DEIR. Chapter 6 concluded that the drainage and control system at CCL will prevent substantial erosion of surface runoff and offsite drainages will not be altered. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality.

Mitigation Measures

BR-7, BR-8, BR-9, BR-10, BR-11, and BR-12 shall be implemented.

8.6.3.8 Potential Impacts to Special-Status Reptile Species

Potential Impacts

The following special-status reptiles have the potential to occur in the vicinity of CCL: coastal western whiptail, San Diego horned lizard, California legless lizard, southwestern pond turtle, and two-striped garter snake.

Southwestern Pond Turtle, Two-Striped Garter Snake. The southwestern pond turtle and two-striped garter snake have no suitable aquatic habitat onsite; therefore, no impacts to these species would occur and no mitigation measures are necessary. Potential for downstream changes in water quality that could affect these species are addressed in Chapters 6.0 and 7.0 of this DEIR.

Coastal Western Whiptail, California Legless Lizard. At CCL, special-status lizard species likely to be associated with the grassland, coastal scrub, and chaparral habitats include coastal western whiptail and California legless lizard. Direct, permanent loss of this habitat would occur from grading and filling activities. Heavy vehicle traffic and other associated construction impacts could also result in direct mortality or injury of the species. These impacts are considered to be adverse but less than significant, because these populations occur in other areas of their geographic range, and impacts from the Proposed Project are not likely to substantially lower the

regional populations of these species below a viable level. In addition, given the relatively small acreage of impacts and availability of alternate large areas of such habitat, locally and regionally, potential impacts to these habitats are also considered less than significant.

San Diego Horned Lizard. This species may be associated with dry wash, coastal scrub, or chaparral habitats at CCL, although focused surveys did not identify individuals or sign of this species. However, extensive harvester ant mounds are present that provide good forage for this species. Direct, permanent loss of habitat for this species would occur from grading and filling activities. Heavy vehicle traffic and other associated construction impacts could also result in direct mortality or injury of the species. These impacts are considered to be adverse but less than significant, because these populations occur in other areas of their geographic range, and impacts from the Proposed Project are not likely to substantially lower the regional populations of this species below a viable level. In addition, given the relatively small acreage of impacts and availability of alternate large areas of such habitat, locally and regionally, potential impacts to these habitats are considered less than significant.

Mitigation Measures

BR-1, BR-2, BR-3, BR-4, and **BR-7** shall be implemented.

8.6.3.9 Potential Impacts to Federal- and State-Listed Bird Species

Potential Impacts

California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and California condor are all federal- and state-listed species with potential to occur in the general vicinity of CCL.

Coastal California Gnatcatcher. Marginal, potential nesting habitat for this species occurs in the form of Riversidean coastal sage scrub, and where adjacent to sage scrub, southern mixed chaparral habitat. There are no known records of observance documented within 5 miles of CCL. If gnatcatcher are present at CCL, the loss of occupied habitat, individuals, or nests of this species would represent a significant adverse impact. Designated critical habitat for gnatcatcher occurs over 5 miles south and southeast of CCL; however, no impacts to designated critical habitat would occur from the Proposed Project.

Least Bell's Vireo, Southwestern Willow Flycatcher. CCL does not support lowland riparian habitats that are suitable nesting and breeding habitat for these species. Individual least Bell's vireo sightings have been documented in the Santa Clara River between I-5 and its confluence with Castaic Creek near CCL. Critical habitat for this species exists less than a mile southeast of CCL. Southwestern willow flycatcher was also detected along the Santa Clara River in 1995. However, no physical impacts to downstream riparian habitat would occur from the Proposed Project. Indirect impacts from changes in water quality could adversely affect the habitat and forage of these birds. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion of surface runoff. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality. Additionally, previously proposed mitigation measures for biological resources will reduce the potential for downstream water quality changes. With implementation of required water quality monitoring and response programs and biological resources mitigation measures, the impacts to downstream water quality are anticipated to be less than significant. This would include less-than-significant impacts on Beneficial Uses, including the fish, wildlife, and wetland habitat uses. With mitigation, no impacts to least Bell's vireo or southwestern willow flycatcher are anticipated.

California Condor. CCL does not support nesting habitat but does support potential forage habitat for this wide-ranging species. The Proposed Project may render the site unsuitable for condor foraging due to construction and/or operation activities; in general, condors are expected to avoid the area due to current operational activities. Given the large extent of foraging habitat in the region and the wide-ranging nature of the species, the loss of this area as potential forage would not represent a significant impact.

Mitigation Measures

BR-1, BR-2, BR-3, BR-4, BR-7, and BR-12 shall be implemented.

Mitigation for potential impacts to the federally listed California gnatcatcher includes the following:

BR-15 USFWS protocol-level surveys shall be conducted for all California gnatcatcher habitat well in advance of any ground-disturbing activities. If surveys are negative, the species shall be presumed absent, and no further impacts shall be anticipated or mitigation measures required.

BR-16 If the surveys are positive (i.e., California gnatcatcher is present), then discussions shall be initiated with USFWS on appropriate measures to avoid, minimize, or mitigate take of this species. These are likely to include:

- Construction activities in the vicinity of active gnatcatcher nests shall be prohibited within a specified distance of nests (usually 500 feet) until after the young have fledged and the nesting is complete.
- Clearing of occupied habitat shall be avoided if possible or practicable. If it is not practicable, clearing shall be prohibited during the nesting season (February to August).

8.6.3.10 Potential Impacts to Nesting Bird Species of Special Concern

Potential Impacts

Yellow-breasted chat, California yellow warbler, loggerhead shrike, tricolored blackbird, California horned lark, golden eagle, white-tailed kite, prairie falcon, Cooper's hawk, northern harrier, burrowing owl, and short-eared owl are federal Species of Concern or state Species of Special Concern known to breed in the vicinity of CCL. Of these, only loggerhead shrike, California horned lark, short-eared owl, and burrowing owl have the potential to nest directly on the landfill, and only yellow-breasted chat, tricolor blackbird and California yellow warbler might nest in downstream riparian habitats.

Yellow-Breasted Chat, California Yellow Warbler, Tricolored Blackbird. Suitable breeding habitat for yellow-breasted chat, which requires dense riparian thickets of willows and other brushy tangles near watercourses, and California yellow warbler, which prefers similar riparian areas, is present a considerable distance downstream of CCL along the Santa Clara River. Suitable habitat for tricolored blackbird, which includes emergent wetlands, is also present further downstream of CCL along the Santa Clara River. No physical impacts to downstream riparian habitat would occur from the Proposed Project. Indirect impacts from changes in water quality have been evaluated to determine if there is a potential for an adverse effect on the habitat and forage of these birds. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion of surface runoff. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality. Additionally, previously proposed mitigation measures for biological resources will reduce the potential for downstream water quality changes. With implementation of required water quality monitoring and response programs and biological resources mitigation measures, the impacts to downstream water quality are anticipated to be less than significant. This would include less-than-significant impacts on Beneficial Uses, including the fish, wildlife, and wetland habitat uses. With mitigation, no impacts to yellow-breasted chat, California yellow warbler, or tricolored blackbird are anticipated. Lighting impacts to nearby riparian areas from night lighting at CCL would be avoided through the use of directional shading, as specified in mitigation measures described in this section.

California Horned Lark, Loggerhead Shrike, Short-eared Owl. The dry, open grassland areas at CCL provide a suitable foraging and breeding habitat for the California horned lark, short-eared owl, and loggerhead shrike. These species may occur throughout their range in Southern California. Potential for these species to occur and breed at CCL is moderate to high. Construction activities involving grading and filling of the annual grasslands and the mixed grassland/shrub habitats would result in direct permanent loss of nesting and foraging habitat. Although extensive habitat for these species is present in the region, California horned lark

and loggerhead shrike are much diminished in their coastal populations and short-eared owl has become rare everywhere. Any removal of inhabited area could affect these species adversely. Therefore, the impacts from loss of habitat for these species are considered to be significant, and mitigation is required. Direct loss of nesting individuals of these species may also occur during construction activities. Mitigation measures to avoid impacts to nesting birds would be implemented, as described in this section.

Burrowing Owl. Grassland habitat at CCL provides limited potential breeding and foraging habitat for this species. The burrowing owl is known from the Sterling Gateway property just north of the Project site, and mitigation land sufficient for the owls observed there, both natural and fuel modified, was provided for the species by Sterling Gateway. The species was not observed during field surveys on the Project site. If the species is present, the Proposed Project would result in loss of burrowing owl habitat. This impact, although adverse, would not be significant, because the landfill represents marginal habitat and higher quality habitat is present elsewhere in the area. To avoid direct impacts to nesting birds, avoidance and mitigation measures described in this section would be implemented. With these measures, no significant impacts to burrowing owl would be anticipated.

Mitigation Measures

BR1, BR-2, BR-3, BR-4, BR-7, and **BR-12** shall be implemented.

BR-17 Although no nighttime construction is anticipated, lighting for construction activities conducted during early morning or early evening hours shall be minimized to the extent possible through the use of directional shading to minimize impacts to nocturnal or crepuscular wildlife.

BR-18 In habitats where nesting birds might occur, vegetation removal shall be avoided when feasible during the nesting season (December through August); winter months are included because this area has potential for owls and hummingbirds, which may breed during this period. Where this is not feasible, preconstruction surveys for nesting pairs, nests, and eggs shall occur in areas proposed for vegetation removal, and active nesting areas flagged. The biological monitor shall assign a buffer around active nesting areas (typically 300 feet for songbirds, 500 feet for raptors). Construction activities shall be prohibited within the buffer until the nesting pair and young have vacated the nests, unless it can be demonstrated through biological monitoring that the construction activity is not hindering the nesting effort. Alternatively, if unused nests are identified in the disturbance area during preconstruction surveys, nests may be destroyed or excluded prior to active nesting.

BR-19 Finished/closed landfill areas at CCL shall be revegetated to offset permanent impacts to grassland foraging and breeding habitat. Native grass species and native forbs shall be used under the direction of specialists in restoration plantings, in accordance with the Preliminary Closure and Postclosure Maintenance Plan for Chiquita Canyon Landfill. This Plan will be updated to specify that revegetation plan development and implementation will be conducted by an ecological restoration specialist familiar with restoration of native Southern California plant communities, that revegetation will be done with locally native plants, and that revegetation will not include plant species on the County's list of invasive species nor invasive species on the lists of the California Invasive Plant Council (CalIPC) nor invasive species listed by California Native Plant Society. The Revegetation Plan identified in MM BR-1 may replace this plan at the discretion of LADRP.

8.6.3.11 Potential Impacts to Foraging or Transient Bird Species of Special Concern (Passerines)

Potential Impacts

Tricolored Blackbird. This species was detected in the immediate vicinity of CCL during the 2002 field surveys. However, there is no suitable nesting habitat that consists of dense marsh vegetation with bulrush and cattails onsite; therefore, there is no potential for this species to nest onsite. Annual grasslands provide limited foraging habitat for this species; although in general, it prefers agricultural areas or landfills. The loss of marginal forage habitat for this species is not expected to represent a significant impact; however, the impact is generally not known because the local population size is unknown.

California Yellow Warbler. Breeding habitat is not present on CCL for this species. Transient birds may occur in chaparral or mule fat habitats onsite. The loss of this habitat for migrating individuals of this species would not represent a significant impact as other mulefat habitat exists in the region.

Mitigation Measures

BR-1, BR-2, BR-3, BR-4, BR-7, and **BR-12** shall be implemented.

8.6.3.12 Potential Impacts to Foraging or Transient Bird Species of Special Concern (Raptors)

Potential Impacts

Golden Eagle, White-Tailed Kite, Prairie Falcon. Golden eagle, white-tailed kite, and prairie falcon occur in the region and have the potential to forage over grasslands and open country at CCL. Loss of grassland forage sites for these species has been occurring throughout Los Angeles County (Harris, pers. comm., 2002), and the species may be regionally declining for this reason. With the Proposed Project, an additional approximately 125 acres of grassland habitat would be lost. The acreage of impacts by vegetation community type includes Mixed Riversidean Sage Scrub/Non-Native Grassland (34.9 acres), Non-Native Grassland (47.6 acres), and Non-Native Grassland with Scattered Shrubs (42.8 acres).

The loss of this additional grassland raptor foraging habitat would represent a significant adverse impact to these species. Mitigation is described below. With mitigation, the impact would be less than significant.

Cooper's Hawk. This species was observed foraging onsite in chaparral habitats during field surveys in 2002. The species' preferred forage habitat is open woodlands, riparian woodlands, and occasionally chaparral. Since there are abundant riparian and chaparral habitats in the region, the loss of this foraging habitat would not represent a significant adverse impact.

Mitigation Measures

BR-1, BR-2, BR-3, BR-4, BR-7, BR-12, and BR-19 shall be implemented.

8.6.3.13 Potential Impact to Special-Status Mammals (Excluding Bats)

Potential Impacts

San Diego Black-Tailed Jackrabbit. This species has a high potential for occurrence in upland areas at CCL. Grading and filling activities from the Proposed Project would result in direct, permanent loss of habitat. Some direct mortality of these species may also occur during construction. Despite substantial acreage of appropriate habitat, the jackrabbit is very diminished as a coastal population. The subspecies could drop below self-sustaining levels. Implementation of mitigation to include landfill revegetation would reduce potential adverse effects to less than significant.

San Diego Desert Woodrat. CCL provides a moderate potential for occurrence of this species in chaparral and other scrub habitats. Grading and filling activities from the Proposed Project would result in direct, permanent loss of habitat. Some direct mortality of these species also might occur during construction. The loss of these communities would represent adverse but less-than-significant impacts to the species, given that substantial

acreage of such habitats occur regionally. The impacts would not be expected to reduce local populations below self-sustaining numbers.

Mitigation Measures

BR-1, BR-2, BR-3, BR-4, BR-7, BR-12, and BR-19 shall be implemented.

8.6.3.14 Potential Impact to Special-Status Mammals (Bats)

Potential Impacts

Long-Eared Myotis, Long-Legged Myotis, Yuma Myotis. These federal Species of Concern forage over scrub, chaparral, water, and other open habitats, and may roost in crevices or small caves on rocky cliffs or outcrops. As such, suitable habitat is present at CCL for both roosting and foraging, and the species are likely to occur. Roost sites near the Santa Clara River would potentially be preferred by females and their young because of the proximity to the foraging areas surrounding the river. Proximity to a forging area like Santa Clara River conserves energy needed for transit and for foraging and can contribute to the probability of a good reproductive outcome and migration outcome. Many bats are migratory and are present in the area seasonally. A number of them only occur in areas with open water resources. The crevice habitat at CCL is potentially suitable for bat roosting, and the impact of filling these roost sites may not be clear, because no quantitative bat studies or surveys to species have been performed. The Proposed Project would result in the loss of potential forage habitat and may cause direct or indirect impacts to roost sites. Direct impacts would result from destruction or filling of roost sites, while indirect impacts may result from roost disturbance or abandonment from construction or operation activities. The loss of foraging habitat would not be considered a significant impact because abundant similar forage habitat occurs in the region. In addition, because abundant sandstone outcrops occur in the mountains and ridges of this region, roost sites for bats that use small crevices and caves would not be considered limiting. As such, the loss or abandonment of roost locations is not anticipated to represent a significant impact.

California Leaf-Nosed Bat, Pallid Bat, Western Mastiff Bat, Big Free-Tailed Bat, Cave Myotis, Mexican Long-Tongued Bat, Pocketed Free-Tailed Bat, Spotted Bat, Townsend's Western Big-Eared Bat. These California Species of Special Concern forage over desert, scrub, chaparral, and other open habitats, and may roost in caves, crevices on low to high cliffs, buildings, or in rocky outcrops. As such, habitat is present at CCL for both roosting and foraging, and the species are likely to occur. Roost sites near the Santa Clara River would potentially be preferred by females and their young because of the proximity to the foraging areas surrounding the river. Proximity to a forging area like Santa Clara River conserves energy needed for transit and for foraging and can contribute to the probability of a good reproductive outcome and migration outcome. Many bats are migratory and are present in the area seasonally. A number of them only occur in areas with open water resources. The crevice habitat at CCL is potentially suitable for bat roosting, and the impact of filling these roost sites may not be clear. The Proposed Project would result in the loss of forage habitat and may cause direct or indirect impacts to roost sites. Direct impacts would result from destruction or filling of roost sites, while indirect impacts may result from roost disturbance or abandonment from construction or operation activities. The loss of foraging habitat would not be considered a significant impact, because abundant similar forage habitat occurs in the region. In addition, because abundant sandstone outcrops occur in the mountains and ridges of this region, roost sites for bats that utilize small crevices and caves would not be considered limiting. As such, the loss or abandonment of small cave or crevice roost locations would not represent a significant impact. These species may also utilize larger roost sites, which are less common but do occur in the region. However, no larger cave roosts were observed at CCL.

Mitigation Measures

BR-2, BR-3, BR-4, BR-7, BR-12, and **BR-18** shall be implemented.

BR-20 In habitats where roosting bats may occur, ground disturbance and roost destruction shall be avoided during the parturition period (generally March through August). Where this is not feasible, exit surveys and/or roost surveys of potential roost sites shall occur to identify active roosts. Construction activity

within 300 feet of active roosts shall be prohibited until the completion of parturition (end of August); unless it can be demonstrated through biological monitoring that the construction activity is not affecting the active roost. Alternatively, if potential roosts are identified prior to onset of parturition, with concurrence from CDFW, roosts may be excluded during the evening forage period (within 4 hours after dark) or fitted with one-way exit doors to effectively eliminate and exclude roost.

8.6.3.15 Potential Impact to Special-Status Fish

Potential Impacts

Arroyo Chub, Santa Ana Sucker. No aquatic habitat is present on CCL that would support the arroyo chub or Santa Ana sucker; as such, there would be no physical impact to these species from the Proposed Project. Potential for downstream changes in water quality that could affect these species are addressed in Chapters 6.0 and 7.0 of this DEIR.

Southern Steelhead Trout. No aquatic habitat is present on CCL that would support the southern steelhead trout; as such, there would be no impact to this species from the Proposed Project. Critical habitat is designated to the west of the landfill, but the Proposed Project would not impact the critical habitat. Potential for downstream changes in water quality that could affect these species are addressed in Chapters 6.0 and 7.0 of this DEIR.

Unarmored Threespine Stickleback. No aquatic habitat is present on CCL that would support the unarmored threespine stickleback; as such, there would be no physical impact to this species from the Proposed Project. The unarmored threespine stickleback is known to be a year-round resident of the Santa Clara River from the confluence of the Santa Clara River and Castaic Creek to I-5. It occurs in the area downstream of the Castaic confluence as far as the Ventura Border during the rainy season and was encountered broadly in the area during surveys for the Newhall Ranch development in the adjacent parts of the River. This area is a part of its essential habitat. The original SEA #23 was developed along the Santa Clara River by the County of Los Angeles in part to protect unarmored threespine sticklebacks. Potential for downstream changes in water quality that could affect these species are addressed in Chapters 6.0 and 7.0 of this DEIR. Chapter 6.0 concluded that the drainage and control system at CCL will prevent substantial erosion from surface runoff. Chapter 7.0 concluded that implementation of all required water quality monitoring and response programs at CCL would ensure that the Proposed Project would not result in significant impacts to downstream water quality. Additionally, previously proposed mitigation measures for biological resources will reduce the potential for downstream water quality changes. With implementation of required water quality monitoring and response programs and biological resources mitigation measures, the impacts to downstream water quality are anticipated to be less than significant.

Mitigation Measures

BR-7, BR-9, BR-10, BR-11, and BR-12 shall be implemented.

8.6.3.16 Potential Impact to Wildlife Movement Corridors

Potential Impacts

Some local wildlife movement may occur along ridgelines or valleys within the general vicinity of CCL. Two major wildlife corridors are known in the general vicinity of CCL, the Santa Clara River and the Santa Monica-Sierra Madre Connection as identified in the Missing Linkages Report (South Coast Wildlands, 2008), and CCL could contribute slightly to movement along both these pathways. Impacts to the Santa Clara River corridor, which may include water quality effects, would be reduced to less than significant impacts through implementation of all required water quality monitoring and response programs and proposed mitigation measures. Because CCL does not lie directly within the identified Santa Monica-Sierra Madre Connection, but is to the east of this linkage, it is unknown how much the site contributes to wildlife movement within this corridor. Many of the steeper ridgelines will be generally left undisturbed by the Proposed Project, and the existing landfill may currently constrain wildlife movement through the heart of the CCL site. Alternatively, some wildlife may move through the site at night. To address the potential for impacts to wildlife corridors,

mitigation measures associated with water quality, night lighting, and site revegetation would be implemented. Native wildlife nursery sites were addressed under Section 8.6.3.9 for California horned lark and loggerhead shrike and Section 8.6.3.13 for bats.

Mitigation Measures

Although impacts to wildlife movement corridors are not anticipated, previously proposed mitigation measures **BR-1, BR-7, BR-8, BR-9, BR-10, BR-11, BR-17,** and **BR-19** shall be implemented.

8.6.3.17 Potential Impacts Under Local Policies or Ordinances

Potential Impacts to SEAs

Local policies or ordinances protecting biological resources will be complied with including SEAs designated by the County of Los Angeles. The nearest SEA in the vicinity is along the Santa Clara River, approximately 0.3 mile south of CCL. Potential impacts to biological resources or water quality in the Santa Clara River ecosystem have been addressed above, and are anticipated to be less than significant with mitigation measures.

Mitigation Measures

BR-3, BR-8, BR-9, BR-10, BR-11, and **BR-12** shall be implemented.

Potential Impacts to Protected Oak Trees

The Oak Tree Report (SB Horticulture, 2014) identified a total of three coast live oaks and one valley oak that qualify for protection under the Los Angeles County Oak Tree Ordinance (see Figure 8-5). One former heritage coast live oak was identified as deceased. The Project has generally avoided impacts to protected trees, but would require the removal of four protected oak trees because of their location in the landfill development area. An oak tree permit would be acquired for removal of the qualifying oaks and all permit terms and conditions would be complied with.

Mitigation Measures

BR-21 For unavoidable impacts to qualifying oak trees, an oak tree permit application would be submitted to the LADRP. All permit terms and conditions would be complied with from the final permit issuance. A mitigation area and plan for oak mitigation will be submitted to LADRP and approved before award of any grading permit for the Project. The site will be assessed for oak woodlands according to the County Oak Woodland Conservation and Management Plan, and a mitigation plan for oak woodland impacts will be submitted for review and approval by LADRP. As appropriate, potential impacts to oak woodlands will be mitigated by planting understory plants in the same area identified onsite for mitigation oaks pursuant to the Oak Tree Permit for the Project.

8.6.3.18 Potential Impacts Through Conflicts with Habitat Conservation Plans or Other Conservation Plans

Potential Impacts

No federal HCPs or state Natural Community Conservation Plans would be affected by the Proposed Project. Other approved local, regional, or state HCPs in the vicinity of CCL were identified in the SCREMP, which addresses management of the Santa Clara River. The Santa Clara River is approximately 0.3 mile south of CCL. Potential impacts to biological resources or water quality in the Santa Clara River ecosystem have been addressed above, and are anticipated to be less than significant with mitigation measures.

Mitigation Measures

BR-3, BR-8, BR-9, BR-10, and BR-11 shall be implemented.

8.7 Mitigation Measures

The mitigation measures described below are the same as those described above for specific potential impacts; they are provided here for ease of reviewing.

BR-1 A Revegetation Plan for the Project will be developed in consultation with LADRP. In order to replicate and potentially expand the available amount of Southern Mixed Chaparral vegetation community at the site, the Revegetation Plan will include a final soil cover of approximately 5 feet, or alternatively a depth approved by regulatory agencies and suitable to allow for proper root growth. If the cover is deemed infeasible by capacity constraints or other conditions, offsite mitigation land will be purchased to offset the loss of approximately 14.4 acres of Southern Mixed Chaparral vegetation community. The acreage acquired will, if feasible, be generally local to the site or the general site area, ideally situated adjacent to or in the general proximity of the Santa Clara River, Hasley Canyon, or Angeles National Forest, and will connect with other protected open space.

BR-2 Preconstruction surveys by qualified biologists shall be conducted for special-status species in impact areas prior to ground-disturbing activities, and if necessary and feasible, resource relocation or exclusion shall be implemented. Resource relocation shall be conducted by qualified biologists in coordination with CDFW or USFWS. Exclusion zones shall be implemented with fencing and/or signage that restricts access.

- For rare plants, this shall include focused surveys by a qualified botanist conducted during the appropriate season for detection (generally during flowering period) the first season prior to ground-disturbing activities over the entire disturbance area proposed for the Project, and then again over the entire area remaining to be disturbed for each phase (cell) of landfill development. If suitable transplant areas for rare plants exist at CCL, surveys will also include potential areas for relocation onsite in order to provide background data for determining transplant success. If no suitable relocation areas exist at CCL, potential mitigation areas in conserved areas within the local watersheds will be identified and surveyed at the same time in order to have background data. Surveys shall follow standard survey protocol for rare plants outlined in Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants (USFWS, 2000a).
- If special-status plants are found at CCL, they shall be avoided, when feasible. To avoid impacts to special-status plants, protective measures, such as the installation of an orange plastic fencing surrounding plant or plant population and the restriction of construction activity within these protected areas shall be implemented.
- If a sensitive plant (including species of CNPS RPR 1-4) is detected during rare plant surveys in an area identified for disturbance, consultation with CDFW will be initiated and will result in preparation of a rare plant report for review by CDFW and LADRP. Mitigation by transplantation will take place before any clearing or grading of the sensitive plant occurs. CDFW will approve the transplantation program, including methods, monitoring, reporting, success criteria, adaptive management, and contingencies.

BR-3 Construction and construction monitoring for animals will occur at discrete time periods. Construction monitoring shall be conducted in areas containing native vegetation at the time of construction activity within the limit of active construction disturbance. Within areas containing native vegetation, ground-disturbing activities shall be prohibited until the area is cleared by a qualified biological monitor during a preconstruction survey up to seven days prior to the beginning of cell construction activities. Biological monitors shall also monitor construction activities within 100 feet of avoided CDFW and USACE jurisdictional drainages.

LEGEND

Limit of Disturbance

Project Boundary

Qualifying Oak Tree Location

Coast Live Oak (*Quercus agrifolia*)*

Valley Oak (*Quercus lobata*)*

N

0 0.125 0.25

Miles

FIGURE 8-5
Qualifying Oak Trees
Chiquita Canyon Landfill
Master Plan Revision

* Tree trunk circumference is 25 inches or greater

\\galt\proj\chiquita\MapFiles\2012\DEIR\Bio_QualifyingOakTrees.mxd

CH2MHILL

BR-4 The construction area boundaries shall be delineated clearly. No construction activities, vehicular access, equipment storage, stockpiling, or significant human intrusion shall occur outside of the designated construction area. In addition, CCL ingress and egress routes shall be marked, and vehicle traffic outside these routes shall be prohibited. Vehicular traffic shall adhere to a speed limit of 15 miles per hour on non-public access roads during construction to ensure avoidance of impacts to sensitive biological resources.

BR-5 Soil or invasive plant seed transfer from clothing, shoes, or equipment shall be minimized through cleaning and monitoring of personnel or equipment transfers between sites, or prior to initial entry at CCL. Contract requirements to ensure vehicles are pressure washed and/or clean and free of soil or invasive weed seeds and other plant parts prior to entering the site will be implemented. Contracts will specify that pressure-washing of construction vehicles is to take place immediately before bringing the vehicle to CCL. The contractor will provide written documentation that the vehicles have been pressure washed or otherwise free of plant material that is checked by both CCL management and the biological monitor, who will jointly assure that this mitigation is implemented. The biological monitoring report will include a record of compliance with this measure.

Within 1 year of Project approval, invasive tamarisk (Tamarix spp.) located onsite will be identified and removed completely. Removed tamarisk will be disposed of in a landfill.

BR-6 Only vehicles that meet fire safety requirements shall be allowed on the construction sites. Camping, trash-burning fires, and warming fires shall be prohibited in the construction area.

BR-7 A mitigation monitoring plan that outlines how mitigation measures specified herein shall be implemented and monitored shall be prepared and approved by LADRP prior to award of any grading permit. The Plan will address mitigation for special-status plants, including management of salvaged topsoil, relocation of offsite property that could serve as permanent open space areas or a conservation easement. The Plan shall include methods, monitoring, reporting, success criteria, adaptive management, and contingencies.

BR-8 For potential impacts to jurisdictional waters, permits shall be obtained for the Proposed Project from USACE (Section 404, CWA) and CDFW (SAA, Section 1603); conditions of these permits would be complied with for the Proposed Project. The terms and conditions of these permits are anticipated to require mitigation consistent with “Compensatory Mitigation for Losses of Aquatic Resources; Final Rule” (USACE, EPA, Federal Register, April 10, 2008), and with CDFW requirements for SAAs. A mitigation plan may be required prior to permit issuance.

BR-9 Stationary equipment such as motors, pumps, generators, and welders shall be located a minimum of 50 feet outside CDFW and USACE jurisdictional drainages where impacts have not been permitted. Construction staging areas, stockpiling, and equipment storage shall be located a minimum of 50 feet outside non-permitted CDFW and USACE jurisdictional drainages.

BR-10 Construction vehicles and equipment shall be checked periodically to ensure they are in proper working condition and that there shall be no potential for leaks. Refueling or lubrication of vehicles and cleaning of equipment, or other activities that involve open use of fuels, lubricants, or solvents, shall occur at least 100 feet away from CDFW and USACE jurisdictional drainages where impacts have not been permitted, and at least 50 feet from other flagged, sensitive biological resources.

BR-11 Best management practices will be implemented during construction to prevent sediment from entering into non-permitted jurisdictional drainages. Existing sedimentation basins prevent sediment-laden water from draining offsite.

BR-12 Only agency-approved pesticides, herbicides, fertilizers, dust suppressants, or other potentially harmful materials shall be applied at CCL, in accordance with relevant state and federal regulations. Rodenticides will not be used. Instead, methods that do not persist and infiltrate the natural food chain will be used for pest elimination such as trapping, gassing, etc. Sediment basins are present along all

drainages at CCL, which capture runoff prior to discharging offsite. Sediment basins will continue to be regularly maintained.

BR-13 Construction sites and landfill operation shall be kept free of trash and litter. Food-related trash and litter shall be placed in closed containers and disposed of daily. Nuisance wildlife breeding will be discouraged at CCL by excluding cavities in buildings and/or equipment or facilities left idle for more than 6 months.

BR-14 Mitigation to reduce unavoidable impacts to special-status plants identified during the preconstruction surveys shall be coordinated with and approved by USFWS and CDFW and could include one or more of the following:

- Salvaging of topsoil to store the seedbank for later spreading of the soil at a suitable location offsite or onsite
- Relocation of the plant(s) to a suitable location offsite by a qualified botanist
- Purchase of mitigation credits or offsite property with known populations of the affected species for inclusion in permanent open space areas or a conservation easement

BR-15 USFWS protocol-level surveys shall be conducted for all California gnatcatcher habitat well in advance of any ground-disturbing activities. If surveys are negative, the species shall be presumed absent, and no further impacts shall be anticipated or mitigation measures required.

BR-16 If the surveys are positive (i.e., California gnatcatcher is present), then discussions shall be initiated with USFWS on appropriate measures to avoid, minimize, or mitigate take of this species. These are likely to include:

- Construction activities in the vicinity of active gnatcatcher nests shall be prohibited within a specified distance of nests (usually 500 feet) until after the young have fledged and the nesting is complete.
- Clearing of occupied habitat shall be avoided if possible or practicable. If it is not practicable, clearing shall be prohibited during the nesting season (February to August).

BR-17 Although no nighttime construction is anticipated, lighting for construction activities conducted during early morning or early evening hours shall be minimized to the extent possible through the use of directional shading to minimize impacts to nocturnal or crepuscular wildlife.

BR-18 In habitats where nesting birds might occur, vegetation removal shall be avoided when feasible during the nesting season (December through to August); winter months are included because this area has potential for owls and hummingbirds which may breed during this period. Where this is not feasible, preconstruction surveys for nesting pairs, nests, and eggs shall occur in areas proposed for vegetation removal, and active nesting areas flagged. The biological monitor shall assign a buffer around active nesting areas (typically 300 feet for songbirds, 500 feet for raptors). Construction activities shall be prohibited within the buffer until the nesting pair and young have vacated the nests, unless it can be demonstrated through biological monitoring that the construction activity is not hindering the nesting effort. Alternatively, if unused nests are identified in the disturbance area during preconstruction surveys, nests may be destroyed or excluded prior to active nesting.

BR-19 Finished/closed landfill areas at CCL shall be revegetated to offset permanent impacts to grassland foraging and breeding habitat. Native grass species and native forbs shall be used under the direction of specialists in restoration plantings, in accordance with the Preliminary Closure and Postclosure Maintenance Plan for Chiquita Canyon Landfill. This Plan will be updated to specify that revegetation plan development and implementation will be conducted by an ecological restoration specialist familiar with restoration of native Southern California plant communities, that revegetation will be done with locally native plants, and that revegetation will not include plant species on the County's list of invasive species nor invasive species on the lists of the Cal-IPC nor invasive species listed by California Native

Plant Society. The Revegetation Plan identified in MM BR-1 may replace this plan at the discretion of LADRP.

BR-20 In habitats where roosting bats may occur, ground disturbance and roost destruction shall be avoided during the parturition period (generally March through August). Where this is not feasible, exit surveys and/or roost surveys of potential roost sites shall occur to identify active roosts. Construction activity within 300 feet of active roosts shall be prohibited until the completion of parturition (end of August), unless it can be demonstrated through biological monitoring that the construction activity is not affecting the active roost. Alternatively, if potential roosts are identified prior to onset of parturition, with concurrence from CDFW, roosts may be excluded during the evening forage period (within 4 hours after dark) or fitted with one-way exit doors to effectively eliminate and exclude roost.

BR-21 For unavoidable impacts to qualifying oak trees, an oak tree permit application would be submitted to the LADRP. All permit terms and conditions would be complied with from the final permit issuance. A mitigation area and plan for oak mitigation will be submitted to LADRP and approved before award of any grading permit for the Project. The site will be assessed for oak woodlands according to the County Oak Woodland Conservation and Management Plan, and a mitigation plan for oak woodland impacts will be submitted for review and approval by LADRP. As appropriate, potential impacts to oak woodlands will be mitigated by planting understory plants in the same area identified onsite for mitigation oaks pursuant to the Oak Tree Permit for the Project.

8.8 Significance After Mitigation

With mitigation, the Proposed Project would result in less than significant impacts to biological resources.

8.9 Cumulative Impacts

8.9.1 Potential Cumulative Impacts

The Proposed Project is located in a subregion of Los Angeles County containing natural open spaces that continue to be rapidly developed for industrial, commercial, and residential land uses. The majority of the development is located in the valleys along major drainages. Castaic Creek, San Francisquito Creek, the Hasley drainages, and Santa Clara River Valley all have planned or approved development. The loss of the most abundant habitats (grassland, ruderal, and coastal sage scrub) would potentially reduce the regional subpopulation numbers of sensitive species, which forage and breed in these open habitats. Although the Proposed Project will reduce the extent of some intact open habitats, mitigation measures have been proposed, which reduce the impacts to sensitive species that may use those habitats to levels below significant.

Open habitats also provide important foraging grounds for raptors. The development of the majority of the open habitats in the area could eventually reduce the raptor populations in the region; however, with mitigation for loss of grassland raptor habitat consisting of habitat set asides, this loss would be reduced. The Proposed Project would contribute to the incremental loss of these habitats, although the limited biological resources onsite would make its contribution minimal.

Cumulative projects in the region could eventually sever wildlife habitat connectivity. Streamside development along the majority of the drainages in the region could limit wildlife access to water sources, and development along the sections of the Santa Clara River could eventually block north-south movement between the Santa Susana Mountains south of the river and the Castaic Lake region to the north. Major movement corridors are known in the vicinity of CCL, the Santa Clara River and the Santa Monica-Sierra Madre Connection. Wildlife movement was not studied at CCL; the contribution of the CCL land to these corridor movement and linkage areas is unknown but could eventually be substantial following completion of the Proposed Project when the site is revegetated. Mitigation measures proposed for the Project would ensure that the Project's potential contribution to impacts associated with corridor movement and linkage areas are less than significant.

8.9.2 Mitigation Measures Required for Cumulative Impacts

Project-specific biological mitigation measures would reduce cumulative impacts. No additional mitigation measures to address potential cumulative impacts are required or proposed.

CHAPTER 9.0

Cultural and Paleontological Resources

9.1 Introduction

Cultural and paleontological resources are given consideration under the California Environmental Quality Act (CEQA) planning and permitting process. Cultural resources include tangible remains associated with human occupation or use of a project area. Commonly, cultural resources include archaeological sites, historic buildings and structures, and ethnographic resources (traditional cultural properties of importance to an ethnic group). Paleontological resources include tangible remains of past plant and animal life forms (fossils) left in the geologic record. The following chapter describes the cultural and paleontological resources that might be affected by the proposed Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project). Full technical reports were prepared and are provided in Appendix F.

9.2 Methodology

9.2.1 Literature Search

In 2005, a literature search of the property boundary of CCL was conducted by staff of the South Central Coastal Information Center of the California Historical Resources Information System (CHRIS) at California State University, Fullerton. An updated literature search was requested by CH2M HILL on January 19, 2010. A 1-mile buffer zone around CCL was included in this search. The CHRIS literature and records review included a review of all recorded archaeological sites as well as all known cultural resource survey and excavation reports. Listings from the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), California Historical Landmarks, and California Points of Historical Interest were examined. State and local listings were consulted for the presence of historic buildings, structures, landmarks, points of historical interest, and other cultural resources.

Technical reports and articles for the general Santa Clara River Valley were also searched. Reports of previous studies conducted within the CCL site were thoroughly reviewed.

9.2.2 Pedestrian Survey

The Proposed Project increases the permitted landfill footprint by approximately 143 acres by extending it slightly south toward the existing landfill entrance and to the north. A systematic pedestrian cultural resource survey of the 143-acre area was conducted on January 28, 2010, by CH2M HILL. Survey methodology for prehistoric and historic archaeological resources, namely, using pedestrian transects spaced at 10- to 15-meter (m) intervals, was performed throughout the entire surveyed area.

Updates to site records were made on appropriate Los Angeles County Department of Parks and Recreation forms. Resources were also mapped using a Trimble Geo XT GPS and photographed. Information on the appearance and physical characteristics of the resources as well as the location of the resources was gathered. The survey was non-collection, and no artifacts were collected by CH2M HILL during the pedestrian survey.

9.2.3 Consultation

The Native American Heritage Commission (NAHC) was contacted by CH2M HILL on December 21, 2012, to request a Sacred Lands File Search, which includes information about traditional cultural properties such as cemeteries and sacred places in the CCL study area. The NAHC responded on December 24, 2012, stating that a search of the Sacred Lands database showed no listing of the Proposed Project site, and provided a list of Native Americans interested in consulting on development projects. Each individual or group was contacted by letter on March 19, 2013. A second set of letters was mailed on April 4, 2013. Follow-up phone calls were made on April 23, 2013. Follow-up e-mails were sent to all individuals and groups on the list on April 23, 2013, if an e-mail address was available.

The Santa Clarita Valley Historical Society (SCVHS) was contacted by letter on March 19, 2013. A second letter was mailed on April 4, 2013. A follow-up phone call was made on April 24, 2013. Follow-up e-mails were sent on April 24, 2013, to two e-mail addresses on the SCVHS Web site and one e-mail address given on the SCVHS caller greeting.

Two Native American respondents, Randy Folkes and Beverly Salazar Folkes, responded to the consultation outreach.

The Fernandeño Tataviam Band of Mission Indians (Tataviam) entered into direct discussions with CCL regarding the Proposed Project. Tataviam provided a letter to the NAHC informing the agency of their discussions and agreement with CCL on April 12, 2014. This letter is included in Appendix F. The agreement between CCL and Tataviam includes avoidance of Bowers Cave, construction and cultural resource oversight and monitoring, and return of all artifacts found to Tataviam.

The SCVHS provided a response letter on July 22, 2013.

9.2.4 Paleontological Review

Geologic maps and reports covering the surficial geology of CCL were reviewed. Both published and unpublished geologic and paleontological literature was reviewed, as well. These sources were reviewed to determine the rock units exposed at CCL and to document the number and locations of previously recorded fossil sites at or near the site. The literature search was supplemented by an archival search at the Vertebrate Paleontology Department of the Natural History Museum of Los Angeles County. No field survey was completed.

9.2.5 Evaluation

A research design was prepared and an additional literature search was completed of current literature in order to assess potential project impacts to previously recorded archaeological site Bowers Cave (CA-LAN-36). A reconnaissance field visit was conducted with the primary goals of (1) completing a horizontal boundary definition of Bowers Cave, (2) assessing the integrity of any existing surface or subsurface deposits, and (3) recovering information to evaluate the site's potential to meet eligibility requirements for CRHR listing.

9.3 Regulatory Setting

9.3.1 Cultural Resources Significance

CEQA requires public or private projects financed or approved by public agencies to assess their effects on historical resources. CEQA uses the term "historical resources" to include buildings, sites, structures, objects or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance. CEQA states that if implementation of a project results in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (*California Code of Regulations* [CCR] Sections 15064.5, 15126.4). For the purposes of this Draft Environmental Impact Report (DEIR), a significant impact will occur if project implementation:

- Causes a substantial change in the significance of a historical resource
- Causes a substantial adverse change in the significance of an archaeological resource
- Disturbs any human remains, including those interred outside of formal cemeteries

Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined.

9.3.2 Paleontological Resources Significance

CEQA requires that project proponents assess potential impacts to paleontological resources, including whether the project would directly or indirectly destroy a unique paleontological resource (Section 15023, Appendix G [5.c]). *California Public Resources Code* (PRC) Section 5097.5 defines any unauthorized disturbance

or removal of a fossil locality or remains on public land as a misdemeanor. PRC Section 30244 requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources.

In response to CEQA, many California regulatory agencies, such as the Los Angeles County Department of Regional Planning (LADRP), have developed environmental guidelines for protecting paleontological resources within their jurisdictions. A CEQA lead agency can require a paleontological resource inventory/ impact assessment, including mapping fossil-bearing rock units and previously recorded/newly documented fossil sites by a qualified paleontologist, evaluating their scientific importance, determining adverse impacts, appraising their significance, and formulating measures to mitigate impacts to an insignificant level.

LADRP required a paleontological assessment of the Proposed Project; a technical report was prepared by Dr. Bruce Lander (Lander, 2002) of Paleo Environmental Associates, Inc., of Altadena, California. For the purposes of this DEIR, a significant impact will occur if Proposed Project implementation:

- Directly or indirectly destroys a unique paleontological resource or site or unique feature.

9.4 Regional Setting

The detailed regional setting and cultural history of the CCL is provided in the technical reports prepared for this project (Appendix F, Confidential Attachment F).

9.4.1 History and Prehistory

Native Americans lived in the area for many centuries prior to the European entrance in the 16th century. Evidence for Paleo-Indian occupation in California exists but remains scant, particularly along the coast of Southern California (Byrd and Raab, 2007). Native Americans practiced hunting and gathering for their livelihoods, and their cultures reached some of the highest levels of social complexity seen in prehistoric California (Moratto, 1984).

European contact in the area first took place in the early 1540s during the Spanish Period, when Juan Cabrillo's expedition landed near the present day city of Ventura, California. The first reported European contact in the immediate area of the CCL site was made in 1769, when Gaspar de Portola's expedition to Monterey traveled through the Santa Clara Valley on his way from the San Fernando Valley to Ventura. Portola was followed by Father Garces in 1776.

The rancho closest to CCL during the Mexican Period was the Rancho San Francisco. The American Period saw a large influx of settlers into the area, and by 1890, the nearby town of Newhall was established as a community. In 1883, the Newhall Land and Farming Company was incorporated by the Newhall family to supervise the various activities of its land holdings, including the Rancho San Francisco, whose main functions now focused on livestock raising and mineral exploitation. The early 1900s marked the beginning of true urban growth in the general area. Along the upper reaches of the Santa Clara River Valley, in the more rugged areas such as the CCL vicinity, ranching continued as an important economic activity to the present day. In recent years, the CCL property has been used in filmmaking, and most recently as a sanitary landfill.

9.4.2 Paleontological Resources

CCL lies near the eastern end of the late Cenozoic Ventura Basin, which is situated in the western Transverse Ranges Province. The eastern end of the basin in the CCL vicinity is composed of stratigraphic or sedimentary rock units consisting of late Cenozoic marine and stratigraphically overlying nonmarine strata reflecting the final filling of the basin and its emergence above sea level. Surficial geologic mapping of CCL and vicinity was prepared by Jennings and Strand (1969), Dibblee (1993), and Winterer and Durham (1962) and indicates that CCL is underlain by three late Cenozoic rock units. These include the Pliocene marine upper Pico Formation and the Pliocene and Pleistocene nonmarine Saugus Formation, which forms the hills at the site, and younger alluvium, which floors the gullies.

Although neither the literature review nor the archival search conducted for this inventory documented any previously recorded fossil sites at CCL, several previously recorded fossil sites near CCL are known in areas mapped as being underlain by these rock units.

9.5 Project Setting

9.5.1 Cultural Resources

Cultural resources that might be present in the general vicinity include prehistoric and/or historic archaeological sites, historic buildings and structures, and traditional cultural properties of importance to Native Americans, Euro-Americans, and to other ethnic groups that might have cultural attachment to the area.

9.5.1.1 Literature Search

The results of the two literature searches completed for CCL showed the majority of the Proposed Project was previously surveyed in 1993 by Theodore Cooley, George Toren, and Loren Santoro for the Phase 1 Cultural Resource Evaluation of the Chiquita Canyon Sanitary Landfill Expansion project (Cooley et al., 1993:15). Twenty-five studies have been conducted within CCL or immediately adjacent to CCL. Eighteen additional investigations located on the Val Verde and Newhall 7.5-minute United States Geological Survey quadrangles are potentially within the CCL vicinity but were not mapped by CHRIS due to insufficient locational information (Shackford, 2005).

One previously recorded site, Bowers Cave (CA-LAN-36), was found within the CCL site property boundary. Isolated find CA-LAN-IF-27 (Toren et al., 1989), a United States Forest Reserve boundary monument dated 1905, was also previously recorded within CCL. This isolated find, however, is no longer present within CCL and was apparently destroyed by previous landfill grading (Cooley et al., 1993:13-14). Three prehistoric archaeological sites are located well outside the CCL property boundary on the south side of State Route 126 (SR-126) (Henry Mayo Drive) or west of Chiquito Canyon Road. A single, dark-gray Franciscan chert projectile point was found outside the CCL property boundary, to the north of Bowers Cave.

None of the databases searched, as described in Section 9.2.1, listed properties within the CCL site.

9.5.1.2 Native American Cultural Resources

No sacred sites were identified within the Proposed Project by the NAHC Sacred Lands File Search or by the literature search conducted at the South Central Coastal Information Center at California State University, Fullerton. Follow-up e-mails were sent to the NAHC on December 26, 2012, to confirm the lack of sacred sites within the Proposed Project and to verify that Bowers Cave is not currently listed as a sacred site. NAHC confirmed that no sacred sites are currently listed within the CCL property, including Bowers Cave.

Randy Folkes and Beverly Salazar Folkes indicated interest in the project. Ms. Salazar Folkes provided additional information about sites in the area surrounding the CCL. Ms. Salazar Folkes stated she would like Native American and archaeological monitors present when grading occurs for the expansion of the CCL.

Tataviam consulted with CCL regarding the Proposed Project. Tataviam provided a letter to the NAHC informing the agency of their discussions and an agreement with CCL on April 12, 2014. This letter is included in Appendix F. The agreement between CCL and Tataviam includes avoidance of Bowers Cave, construction and cultural resource oversight and monitoring, and return of all artifacts found to Tataviam.

The SCVHS relayed concerns regarding Bowers Cave in their response. The SCVHS made two recommendations: 1, Bowers Cave should be inspected by an archaeologist, specifically a state certified independent archaeologist, and 2, Bowers Cave should receive state historic designation prior to any of the proposed project activities.

9.5.1.3 Historic Buildings and Structures

There are no known buildings or structures within CCL property. The closest listed historical resource is the Rancho San Francisco Estancia Adobe, which is located about 2.5 miles northeast of CCL. The adobe was

constructed in 1803 and is listed in the California Inventory of Historic Resources as State Landmark 556. The adobe is also listed as Los Angeles City Cultural Heritage No. 124.

9.5.2 Archaeological Resources

Site CA-LAN-36, Bowers Cave, is situated within the property boundary of CCL; a detailed discussion of Bowers Cave is provided below. A single isolated find, CA-LAN-IF-27, was previously recorded within CCL. This isolated find, however, was not relocated during the 1993 survey and was described in Cooley et al.'s (1993) report as removed during landfill grading.

9.5.2.1 CA-LAN-36, Bowers Cave

The cave, which is more accurately defined as a rock shelter, was discovered by non-indigenous people in 1884. The Pyle brothers, who found the cave in 1884, removed several artifacts and sold them to Reverend Stephen Bowers, a long-time collector of indigenous artifacts, for 1,500 dollars (Elsasser and Heizer, 1963:2; Van Valkenburgh, 1952:7). According to Bowers, he also visited the cave, did some excavation, and found the partial remains of organic artifacts that matched the technological descriptions of those recovered by the Pyles (Bowers, 1885:45). Bowers ultimately sold several items in the collection to the Peabody Museum at Harvard in 1887.

The next phase of known work, and the first systematic archaeological investigation of the site, was conducted in 1951 (Van Valkenburgh, 1952). While the well-known Bowers Cave collection was housed in the Peabody Museum and represented a rare and widely known collection of Native California artifacts, the location of the cave was generally unknown. Archaeologist Richard van Valkenburgh found one of the Pyle brothers, Emmett, when working in the Los Angeles area in 1950. Pyle took Van Valkenburgh to the cave. Additional excavations found basket fragments and other remains similar to those from the Bowers collection (Elsasser and Heizer 1963). Blue and rose colored glass trade beads were found in the cave during these excavations, indicating a possible Protohistoric date for the cave. Southwestern pottery sherds, dated to the 1200s by the School of American Research in Santa Fe, New Mexico, were also discovered. The cave was noted at that time as having a blackened ceiling, and Van Valkenburgh hypothesized that the cave had been inhabited at some point (Van Valkenburgh, 1952).

In 1960, the items found in the cave that had been housed in the Peabody Museum were further described by Elsasser and Heizer (1963). The primary goal of Elsasser and Heizer was to analyze and to compare the Peabody collection with known artifacts from the Tataviam and Chumash cultures (Elsasser and Heizer, 1963). No additional excavations were conducted during this study. The last systematic study of the Bowers Cave artifacts was Hudson and Underhay's (1978) analysis of the "sunsticks" found at the site. In 1981, Louis Tartaglia and R. Wlodarski (Tartaglia and Wlodarski, 1981) revisited Bowers Cave and prepared an updated archaeological site survey record form. The site was revisited in 1993. At that time, Bowers Cave was determined to be adjacent to CCL (Cooley et al., 1993:17).

9.5.2.2 Isolated Find CA-LAN-IF-27

Isolated find CA-LAN-IF-27 (Toren et al., 1989), a United States Forest Reserve boundary monument dated 1905, is no longer present within CCL and was noted as having been destroyed by previous landfill grading (Cooley et al., 1993:13-14).

9.5.2.3 Archaeological Survey and CA-LAN-36 Field Investigation

Visibility throughout the 2010 archaeological survey area was excellent, at approximately 70 percent. A small section of the southern portion of CCL was fair, at approximately 50 percent, as much of this area was covered with thick non-native grass. No new cultural resources were identified during the 2010 survey.

Site CA-LAN-36 was revisited by CH2M HILL during the archaeological survey in 2010. No artifacts were found either inside the cave or immediately outside of the cave at that time. CH2M HILL returned to the site in 2012. During this phase, surface artifacts next to an animal nest, possibly a pack rat nest, were noted. The cave was videotaped, photographed, and sketched, and four 40-by-40-centimeter (cm) test units were placed within the

cave. Three 40-by-40-cm test units were completed on the floor of the main chamber of the cave. One 30-by-30-cm unit was placed within the northern chamber, or arm, of the cave, which also included surface collecting and examination of an animal nest. Because artifacts and ecofacts were identified in three of these four units, no additional test units were deemed necessary at that time.

Stephen Bowers' original descriptions of the cave are reminiscent of its current condition. Bowers noted the cave was not sufficiently high to stand upright, and the bottom was covered with sand caused by the disintegration of the roof and walls; he noted the presence of a large wood rat nest, the wood rats being the likely culprits for the damage to the baskets (Bowers, 1885). Portions of the ceiling of the cave have continued to collapse, leaving very little of its original surface intact, and the roof blackening which is mentioned in previous research is gone. While the majority of collapse appears to have occurred in the eastern portion of the cave, the northwest-west wall appears to have collapsed, as well. The engraving, "MAC 1884" is now gone, presumably due to wall collapse in this area, and has been replaced by modern graffiti, some marking the years 1911 and 2009, and the others mimicking "caveman" art, including stick-style animals and humans with spears. The flat area at the mouth of the cave now appears to be smaller than in historical photos, and a small mound of shells at the southern edge of the cave has accumulated from the erosion of the hillside above. Additionally, earlier measurements of the cave indicate that the space in the cave was smaller in area, but nearly 4 feet taller (Van Valkenburgh, 1952). There is no mention in previous studies of a small north- and west-extending chamber located on the northern interior wall of the cave until 1991, when it is noted on the CA-LAN-36 site form (W&S Consultants, 1994). This armature extends roughly 80 cm north from the main cave chamber and then due west approximately 2 m. It is unclear if this cave extension is natural or was excavated by humans or animals at some point after Van Valkenburgh's excavations. If it existed in 1952, he did not note it as an important feature of the cave. The cave collapses are likely caused by root disturbance, looting, previous excavations, and the Northridge quake, which caused the large landslide in 1994, just west of the cave along the access trail.

9.5.3 Paleontological Resources

CCL was investigated at different times during the past 40 years (Tartaglia, 1981; Cooley and Toren, 1989; Cooley et al., 1993; Lander, 2002).

9.5.3.1 Adjacent Projects

In 1987, for the Phase I feasibility analysis for the Los Angeles County Airport Site Selection Study (Carbone et al., 1987), paleontologist William Gilmour examined the geologic and paleontological literature and reports for the region by securing baseline data on paleontological sensitivity from the San Bernardino County Museum and the Natural History Museum of Los Angeles County. The "Indian Dunes Alternative" included the southern portion of CCL in its secondary study area (Carbone et al., 1987:Figure 2).

Carbone et al. (1987:27) reported that records from the Natural History Museum of Los Angeles County revealed no documented fossil localities within the primary or secondary study areas for the Indian Dunes Alternative. Despite the lack of documented resources, Carbone et al.'s (1987) review of the paleontological and geologic literature indicated that the Pleistocene nonmarine deposits present in the secondary study area (e.g., within the southern portion of CCL) are similar to and have been correlated to the San Timoteo Formation (Dibblee, 1981). The San Timoteo Formation, which is Middle to Late Pleistocene in age, is known to contain very significant vertebrate fossils (Frick, 1921; Reynolds and Reeder, 1986). In contrast, the Quaternary alluvium common to the primary study area for the Indian Dunes Alternative (e.g., the airstrip located just south of State Route 162), does not regularly yield significant fossils.

In 2003, for the proposed Sterling Gateway project located east and northeast of the community of Val Verde and within Martinez Chiquito Canyon, paleontologist Samuel McLeod conducted a paleontological overview (McKenna, 2003:6-7) for the area immediately north of CCL. Surface exposures of the terrestrial Pliocene-Pleistocene Saugus Formation are present in the Sterling Gateway parcels a short distance to the north of CCL. Exposures of the marine Pliocene Pico Formation are present in the remaining areas of the Sterling Gateway parcels.

A fossil locality (LACM 6062) on the west side of Hasley Canyon produced specimens of fossil alligator lizard, *Gerrhonotus*, and fossil pocket gopher, *Thomomys*. Locality LACM 6063 is in the canyon that drains into Castaic Creek; it produced fossil specimens of horse, *Equus*. Localities in the Pico Formation (none near the Sterling Gateway or CCL parcels) have produced specimens of fossil bonito shark, *Isurus planus*, fossil great white shark, *Carcharodon carcharhias*, and even rare fossil right whale, *Balaenidae* (McKenna, 2003:6-7).

As reported more recently by Cooley et al. (1993:5), the bedrock of the southern portion of CCL consists of sandstone, conglomerate, and siltstone rocks of the nonmarine Pliocene-Pleistocene age Saugus Formation. The northern portion of the property consists of sandstone, siltstone, and conglomerate bedrock of the Pliocene Pico Formation. Marine invertebrate fossils of pectin, oyster, and sand dollar were observed to be present in the area of this formation at CCL.

9.5.3.2 Master Plan Revision

As explained by Lander (2002:4-5), neither the literature review nor the archival search conducted documented any previously recorded fossil sites at CCL. However, several previously recorded fossil sites are known in areas mapped as being underlain by these rock units near CCL, including three fossil sites at the landfill.

9.5.3.3 Upper Pico Formation

Although no previously recorded fossil site is reported in the upper Pico Formation within CCL, fossilized shells representing extinct Pliocene marine species of snails and clams and the fossilized tests of extinct species of sand dollars were recovered at several previously recorded fossil sites in this rock unit near CCL (Winterer and Durham, 1962). One of these fossil sites occurs at the landfill but outside the grading footprint, and three other fossil sites lie east of San Martinez Chiquito Canyon and only 0.1 to 0.3 miles from the landfill. Fossil site V84 yielded the fossilized teeth of the extinct, late Cenozoic genus of horse *Pliohippus* (Winterer and Durham, 1962).

The occurrence of several previously recorded fossil sites near CCL suggests that there is a potential for additional similar, fossil remains being encountered by earth-moving activities at previously unrecorded fossil sites in the upper Pico Formation at CCL.

9.5.3.4 Saugus Formation

No previously recorded fossil site is reported as occurring in the Saugus Formation at CCL. Fossilized bones and teeth of extinct and possibly extant species of Pliocene land mammals assignable to the Blancan North American Land Mammal Age have been recovered at a number of previously recorded fossil sites in this rock unit near CCL (Lander, 1988, 1990; Pollard, 1958; Reynolds, 1987; Winterer and Durham, 1962). Two of these sites occur at the landfill but outside the grading footprint, and three other sites lie only 0.05 miles to less than 0.7 miles from the landfill (Lander, 2002:Figure 1). These fossils included fossilized jaws and teeth of *Pliohippus*, alligator lizard (*Gerrhonotus*), rabbit, pocket gopher (*Thomomys*), and the pocket mouse (*Perognathus*).

The occurrence of a number of previously recorded fossil sites near CCL suggests a potential for additional similar, fossil remains being encountered by earth moving at previously unrecorded fossil sites in the Saugus Formation at CCL.

9.5.3.5 Younger Alluvium

At and near the surface, the younger alluvium is probably too young to contain remains old enough to be considered fossilized. For this reason, there is probably only a low potential for scientifically highly important fossil remains being encountered by earth moving at previously unrecorded fossil sites.

9.5.3.6 Artificial Fill

There is no potential for scientifically highly important fossil remains being encountered by earth-moving activities within artificial fill.

9.6 Potential Impacts

9.6.1 Standards of Significance

9.6.1.1 Cultural Resources

CEQA Guidelines define three ways that a property may qualify as a historical resource for the purposes of CEQA review:

- If the resource is listed in or determined eligible for listing in the CRHR
- If the resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC unless the preponderance of evidence demonstrates that it is not historically or culturally significant
- If the lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (CCR, Title 14, Division 6, Chapter 3, Section 15064.5(a))

Each of these ways of qualifying as a historical resource for the purpose of CEQA is related to the eligibility criteria for inclusion in the CRHR (PRC 5020.1(k), 5024.1, 5024.1(g)). A historical resource may be eligible for inclusion in the CRHR if it meets any of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
2. Is associated with the lives of persons important in our past
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
4. Has yielded, or may be likely to yield, information important in prehistory or history

Properties that are listed in or eligible for listing in the NRHP are considered eligible for listing in the CRHR and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1(d)(1)).

9.6.1.2 Integrity

Integrity is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Historical resources eligible for listing in the CRHR must meet one of the criteria of significance described above and retain enough of their historical character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Historical resources that have been rehabilitated or restored may be evaluated for listing.

Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criterion under which a resource is proposed for eligibility. Alterations over time to a resource or historical changes in its use may themselves have historical, cultural, or architectural significance.

It is possible that historical resources may not retain sufficient integrity to meet the criteria for listing in the NRHP, but they may still be eligible for listing in the CRHR. A resource that has lost its historical character or appearance may still have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historical information or specific data.

9.6.1.3 Paleontological Resources

CEQA requires that project proponents assess potential impacts to paleontological resources, including whether the project would directly or indirectly destroy a unique paleontological resource. With few exceptions, CEQA requires the mitigation of all project impacts to less-than-significant levels.

According to *CEQA Guidelines*, a project would result in significant paleontological impacts if it were to:

- Directly or indirectly destroy a unique paleontological resource or site.

As described by Lander (2002:7), significance criteria are set forth in compliance with Society of Vertebrate Paleontology (SVP) guidelines (SVP, 1995) for assessing the significance of construction-related adverse environmental impacts on paleontological resources or the paleontological sensitivity of a particular rock unit to adverse impacts.

The paleontological significance (high, moderate, low, none, undetermined) of a rock unit exposed at a project site is the measure most appropriate to assessing the scientific importance of the paleontological resources of the project site, because the areal distribution of a rock unit can be delineated on a topographic map. The paleontological importance of a rock unit reflects (1) its potential paleontological productivity and (2) the scientific importance of the fossils it has produced locally.

The potential paleontological productivity (high, moderate, low, none, undetermined) of a rock unit exposed at a project site is based on the abundance/densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit at and near the project site. Exposures of a specific rock unit at a project site are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit at and near the project site. The criteria for establishing the potential paleontological productivity of a rock unit exposed at a project site are described here:

- **High potential.** The rock unit contains a comparatively high density of previously recorded fossil sites, has produced numerous fossil remains at and/or near the project site, and is very likely to yield additional similar remains at the project site.
- **Moderate potential.** The rock unit contains a relatively moderate density of previously recorded fossil sites and has produced some fossil remains at and/or near the project site.
- **Low potential.** The rock unit contains no or a comparatively low density of previously recorded fossil sites, has yielded very few or no fossil remains near the project site, and is not likely to yield any remains at the project site.
- **Undetermined potential.** The rock unit has limited or no exposure at the project site, is poorly studied, contains no previously recorded fossils, and has produced no fossil remains near the project site.
- **No potential.** There are unfossiliferous artificial fill and igneous and high-grade metamorphic rock units with no potential for containing any unrecorded fossils or yielded any fossil remains.

A fossil is considered scientifically important if it is (1) identifiable, (2) complete, (3) well preserved, (4) temporally diagnostic, (5) useful in environmental reconstruction, (6) a type or topotypic specimen, (7) a member of a rare species, (8) a species that is part of a diverse assemblage, and/or (9) a skeletal element different from, or a specimen more complete than, those now available for its respective species. Identifiable fossil land mammal remains are considered scientifically highly important because of their potential use in providing very accurate age determinations and environmental reconstructions for the rock units in which they occur. Using these definitions, the paleontological importance of a rock unit exposed at the project site would be assessed using the following criteria:

- **High importance.** The rock unit has a comparatively high potential for containing unrecorded fossil sites and for yielding scientifically important fossil remains at the project site similar to those previously recorded from rock units at and/or near the project site.
- **Moderate importance.** The rock unit has relatively moderate potential for containing unrecorded fossil sites and for yielding scientifically important fossil remains at the project site similar to those previously recorded from rock units near the project site.
- **Low importance.** The rock unit has comparatively low potential for containing any unrecorded fossil site or for yielding any scientifically important fossil remains at the project site.

- **Undetermined importance.** The rock unit is one for which too few data are available from the project site and vicinity to allow an accurate assessment of its potential for containing any unrecorded fossil site or for yielding any scientifically important fossil remains at the project site.
- **No importance.** There are unfossiliferous artificial fill and igneous and high-grade metamorphic rock units having no potential for containing any unrecorded fossil site or for yielding any fossil remains.

9.6.2 Proposed Project

9.6.2.1 Cultural Resources

CA-LAN-36 is located within the proposed area of disturbance of the Proposed Project. However, Mitigation Measure CR-1 states that grading plans should clearly depict the sensitive area of CA-LAN-36. A buffer around this sensitive area will be established in consultation with a qualified archaeologist and the Permittee, and grading will not occur beyond this established buffer.

Therefore, grading will not impact the cave. The view from the cave will not be significantly altered as the landfill is currently clearly visible from the cave. Mitigation Measure CR-1 also states that a qualified archeologist shall monitor earth-moving activities that would occur within close proximity to the established buffer.

The Proposed Project will not directly affect any historical resources as defined by CEQA. The areas delineated for extension of the grading footprint have already been archaeologically surveyed with negative results; no historical resources are present. The archaeological survey conducted in 2010 confirms the presence of CA-LAN-36 within the Proposed Project, and Mitigation Measure CR-1 will be employed to avoid impacts to the cave.

The current inventory has demonstrated that the survey area contains prehistoric and historical archaeological resources. Further, the geomorphological environment of CCL is one of alluvial deposition. As with any ground-disturbing project, there remains a potential for the accidental discovery of buried cultural resources not detected through a surface inventory; therefore, Mitigation Measure CR-2 should be followed. Mitigation Measure CR-3 would be implemented if buried cultural resources are found during ground disturbance.

9.6.2.2 Paleontological Resources

The Proposed Project will not directly affect any known paleontological resources as defined by CEQA. The areas delineated landfill extension have already been archaeologically surveyed with negative results; no paleontological resources were detected.

In a more recent evaluation, Lander (2002:7) suggests that the Proposed Project (excavation of new cells) and the landfill operation (acquisition of daily cover) could adversely affect presently undetermined/unrecorded fossil sites. Direct impacts would result mostly from earth moving in previously undisturbed strata but also from any earth-moving activity that buried previously undisturbed strata, making the strata and their paleontological resources unavailable for future scientific investigation. As with any ground-disturbing project, there remains a potential for the accidental discovery of buried paleontological resources. If paleontological resources are discovered during ground-disturbing activities, appropriate mitigation measures (CR-4 through CR-11) should be followed.

Lander (2002:7) further suggests that the possible loss of some fossil remains, unrecorded fossil sites, associated specimen data and corresponding geologic and geographic site data, and the fossil-bearing strata is a potentially significant long-term environmental impact. Easier access to fresh exposures of fossiliferous strata and the potential for unauthorized collecting by landfill personnel, rock hounds, and amateur and commercial fossil collectors could result in the loss of some additional fossil remains, unrecorded fossil sites, and associated specimen data and corresponding geologic and geographic site data. The loss of these additional paleontological resources is another potentially significant long-term environmental impact.

9.6.2.3 Upper Pico Formation

The upper Pico Formation has yielded fossil remains from fossil sites near CCL. As a result, adverse environmental impacts on the paleontological resources of the upper Pico Formation resulting from earth moving would be considered to be of high paleontological significance, because there is a high potential for the loss of scientifically important fossil remains, unrecorded fossil sites, and associated specimen data and corresponding geologic and geographic site data.

9.6.2.4 Saugus Formation

The Saugus Formation has yielded fossil remains near CCL. As a result, adverse environmental impacts on the paleontological resources of the Saugus Formation resulting from earth moving would be considered to be of high paleontological significance, because there is a high potential for the loss of scientifically important fossil remains, unrecorded fossil sites, and associated specimen data and corresponding geologic and geographic site data.

9.6.2.5 Younger Alluvium

Any adverse environmental impact on paleontological resources resulting from earth moving in the younger alluvium would be of low significance, since it is probably too young at and near the surface to contain remains old enough to be considered fossilized.

9.6.2.6 Artificial Fill

There would be no impact on paleontological resources associated with earth moving in the artificial fill, which is unfossiliferous.

9.7 Mitigation Measures

9.7.1 Cultural Resources

CR-1 A qualified archaeologist will flag off the area around Bowers Cave and establish a buffer in consultation with the Permittee to ensure avoidance of grading of the cave site. Grading plans will clearly depict the sensitive area and state that grading must not occur beyond the established buffer. The qualified archeologist will monitor earth-moving activities that would occur within 100 feet of the established buffer.

CR-2 Prior to the start of monitoring activities, a Cultural Resources Monitoring Plan (CRMP) will be developed. The CRMP will include, at a minimum: 1) the location of areas to be monitored, 2) frequency of monitoring, 3) description of resources expected to be encountered, 4) description of circumstances that would result in a construction halt, 5) description of monitoring reporting requirements, and 6) disposition of found/collected materials.

CR-3 Native American consultation has indicated that Bowers Cave and the surrounding region may be important to local Native Americans, specifically Tataviam. Provisions will be made to provide cave access to Tataviam, and Tataviam will have the option to provide a construction oversight monitor during ground-disturbing activities. The Tataviam monitor will act as a liaison between archaeologists, the permittee, contractors, and public agencies to ensure that cultural features are treated appropriately from the Tataviam point of view. All artifacts that may be found will be returned to the Tataviam or reinterred into the earth.

9.7.2 Paleontological Resources

CR-4 Prior to construction, the services of a qualified vertebrate paleontologist shall be retained to develop and implement a Paleonteological Resources Mitigation Plan prior to earth moving activities. The Plan will include the following elements:

- development of agreement with a recognized museum repository;

- identification of final disposition, permanent storage, and maintenance of any fossil remains and associated specimen data and corresponding geologic and geographic site data that might be recovered; and
- determination of level of treatment (preparation, curation, cataloguing) of the remains that would be required before the mitigation program fossil collection would be accepted for storage.

CR-5 The paleontologist and/or monitor shall conduct a preconstruction survey of the project site prior to the start of any earth moving associated with the landfill expansion.

CR-6 The paleontologist or monitor shall coordinate with landfill personnel to provide information regarding regulatory agency requirements for the protection of paleontological resources. Landfill personnel also will be briefed on procedures to be followed in the event that a fossil site or fossil occurrence is encountered during construction, particularly when the monitor is not onsite. The briefing will be presented to new landfill personnel as necessary. Names and telephone numbers of the monitor and other appropriate mitigation program personnel shall be provided to the landfill manager.

CR-7 Earth-moving activities shall be monitored by the paleontologist only in those areas of the project site where these activities would disturb previously undisturbed strata in the Saugus and upper Pico Formations (not in areas underlain by artificial fill or younger alluvium). With concurrence from the project paleontologist, if no fossil remains are found once 50 percent of earth moving has been completed in an area underlain by a particular rock unit, monitoring can be reduced or suspended in that area.

CR-8 All diagnostic fossil specimens recovered from the project site shall be treated (prepared, curated, catalogued) in accordance with designated museum repository requirements.

CR-9 The monitor shall maintain daily monitoring logs. A final technical report of results and findings shall be prepared by the paleontologist and included with the material submitted for curation (see above).

9.8 Significance After Mitigation

9.8.1 Cultural Resources

Implementation of mitigation measures would reduce Proposed Project impacts upon historical resources to below the level of significance.

9.8.2 Paleontological Resources

Implementation of mitigation measures would reduce Proposed Project impacts upon paleontological resources to below the level of significance.

9.9 Cumulative Impacts

9.9.1 Potential Cumulative Impacts

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (PRC Section 21083; CCR, Title 14, Sections 15064(h), 15065(c), 15130, and 15355). Impacts to known significant archaeological sites or subsurface archaeological resources from the Proposed Project and other projects in the vicinity could occur.

However, project proponents for this and future projects in the area can mitigate impacts to known significant and as yet undiscovered subsurface archaeological sites by implementing mitigation measures. If a large, stratified, buried prehistoric archaeological site or discrete filled-in historic period features were encountered during the Proposed Project, the possibility of cumulative impacts would arise, because such sites might be

highly significant, and in the past, others have been destroyed or damaged by agricultural activity and/or commercial/industrial/residential development near the Proposed Project.

However, given the relative low level of impact to such a site that the Proposed Project would cause, it is also possible, but unlikely, that Proposed Project activities would lead to significant cumulative impacts. The potential impact will depend on the extent of any discovered archaeological deposits. The Proposed Project's contribution to this cumulative impact is considered adverse but not significant. Any potential impact to a known significant cultural resource would be mitigated to a level of insignificance; and potential impact to an unknown site would be minimized by a stop-work procedure if a site were uncovered, allowing time for proper survey and mitigation of the site to occur. No impacts to architectural resources are expected to occur.

9.9.2 Mitigation Measures Required for Cumulative Impacts

9.9.2.1 Cultural Resources

Implementation of Mitigation Measures CR-1 and CR-3 would address both potential Proposed Project impacts to cultural resources, as well as potential cumulative impacts.

9.9.2.2 Paleontological Resources

Implementation of Mitigation Measures CR-4 through CR-11 would address both potential Proposed Project impacts to paleontological resources and potential cumulative impacts.

CHAPTER 10.0

Traffic and Transportation

10.1 Introduction

This chapter evaluates the potential traffic impacts related to the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project), which is located on the north side of State Route 126 (SR-126), west of Interstate 5 (I-5) in the Santa Clarita Valley area of Los Angeles County. This assessment is based on the Chiquita Canyon Landfill Master Plan Revision Traffic Analysis prepared by CH2M HILL in June 2014. The *CCL Master Plan Revision Traffic Analysis* is provided as Appendix G of this Draft Environmental Impact Report (DEIR).

The scope of the analysis is in accordance with direction provided by Los Angeles County Department of Public Works (LACDPW), Traffic and Lighting Division staff and satisfies the Traffic Impact requirements of the Congestion Management Program (CMP) for Los Angeles County. The analysis focuses on onsite circulation and access, as well as offsite traffic impacts, and addresses the Proposed Project impacts at area intersections. A vicinity map showing the location of the Proposed Project and surrounding major street system is provided in Figure 10-1.

10.2 Methodology

10.2.1 Study Area

This assessment includes documentation of existing traffic conditions, analysis of project buildout traffic conditions and identification of project-related impacts at the following intersections:

- Chiquito Canyon Road at SR-126
- CCL Entrance (existing) at SR-126
- Wolcott Way at SR-126
- Commerce Center Drive at SR-126
- I-5 southbound ramps at SR-126
- I-5 northbound ramps at SR-126
- Franklin Parkway at Commerce Center Drive
- Wolcott Way at Franklin Parkway (proposed CCL entrance)

The existing lane configurations of the study intersections are illustrated in Figure 10-2. Five scenarios were analyzed for the morning and evening peak hours and include:

- Existing Conditions
- Existing plus Growth (2015) Conditions without Project
- Existing plus Growth (2015) Conditions with Project
- Existing plus Growth (2015) plus Other Development Conditions without Project (Cumulative Conditions)
- Existing plus Growth (2015) plus Other Development Conditions with Project (Cumulative plus Project Conditions)

10.2.2 Analysis Methodology

Traffic analysis for the intersections was conducted using two different methods to accommodate the requirements of both the California Department of Transportation (Caltrans) and the County of Los Angeles. The Highway Capacity Manual (HCM) and Intersection Capacity Utilization (ICU) methodologies were used to analyze intersection operations.

Caltrans uses the HCM methodology for intersection analysis. The HCM methodology assesses level of service (LOS) based on average delay per vehicle. The delay is calculated using peak-hourly traffic volumes, peak-hour factors, number of lanes, type of operation (signalized or unsignalized), and other factors. The HCM

methodology was implemented using the Synchro software (Version 8). The HCM delay forecast translates to a LOS assessment, ranging from LOS A to LOS F using the delay ranges shown in Table 10-1.

TABLE 10-1
Highway Capacity Manual Based Level of Service and Delay Ranges

Average Delay (seconds per vehicle)		LOS
Signalized Intersections	**Unsignalized Intersections**	
< 10.0	< 10.0	A
> 10.0 to < 20.0	> 10.0 to < 15.0	B
> 20.0 to < 35.0	> 15.0 to < 25.0	C
> 35.0 to < 55.0	> 25.0 to < 35.0	D
> 55.0 to < 80.0	> 35.0 to < 50.0	E
> 80.0	> 50.0	F

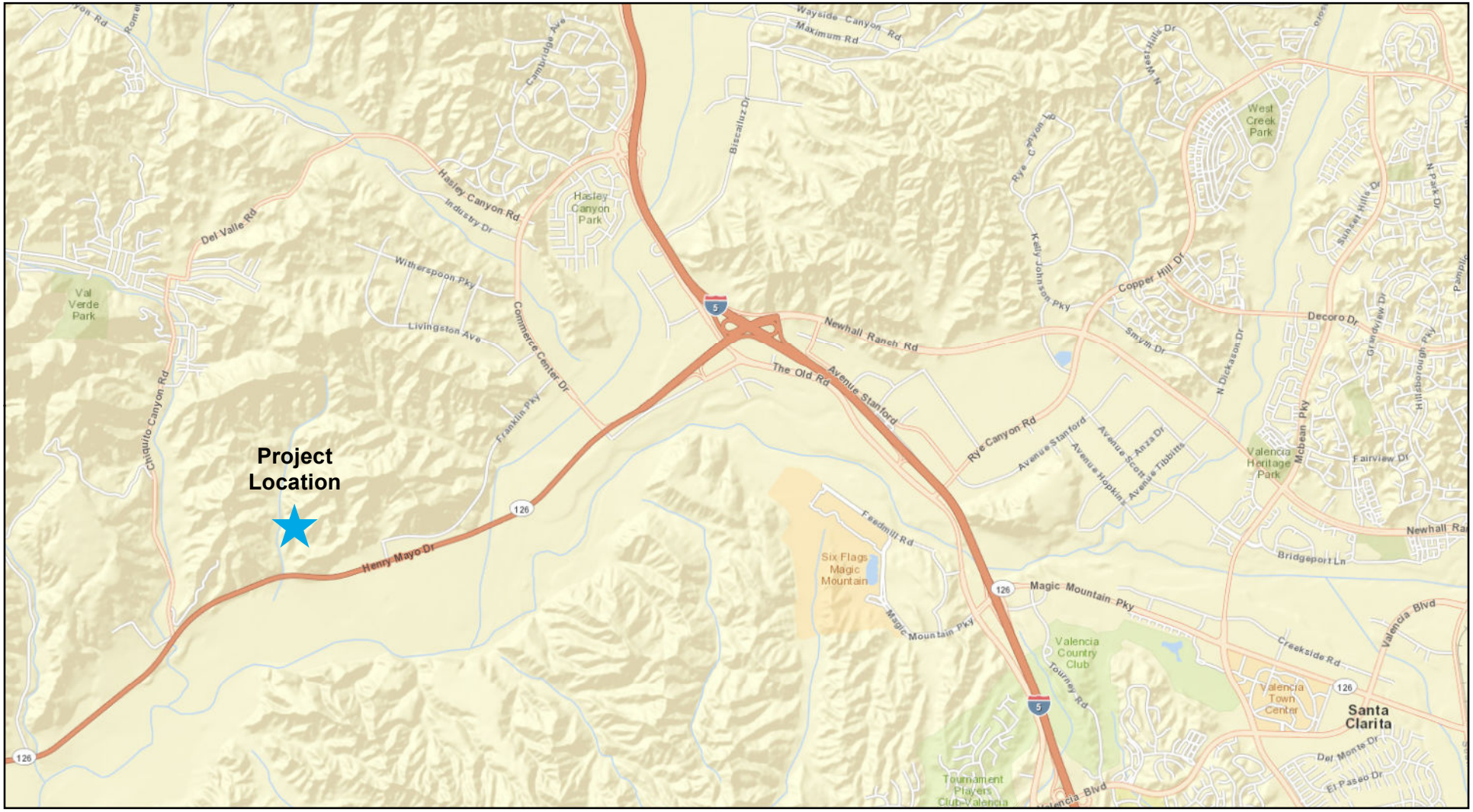
Notes:
> = greater than
< = less than
Source: Transportation Research Board, 2010

The ICU methodology provides a comparison of the number of vehicles actually passing through an intersection during a given hour to the theoretical hourly vehicular capacity of that intersection. A saturation flow rate of 1,600 vehicles per hour per lane for all through/turn lanes and 2,880 vehicles per hour per lane for all dual turn lanes was used in the ICU calculation, consistent with the guidance provided in the Los Angeles County CMP. The ICU calculation returns a volume-to-capacity (V/C) ratio that translates into a corresponding LOS. A description of each LOS and the corresponding V/C ratio is provided in Table 10-2.

TABLE 10-2
Intersection Capacity Utilization Level of Service Criteria

LOS	V/C Ratio	Definition
A	0.00 - 0.60	At LOS A, there are no cycles that are fully loaded, and few are even close to loaded. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	>0.60 - 0.70	LOS B represents stable operation. An occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted with platoons of vehicles.
C	>0.70 - 0.80	In LOS C stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasionally drivers may have to wait through more than one red signal indication and backups may develop behind turning vehicles.
D	>0.80 – 0.90	LOS D encompasses a zone of increasing restriction, approaching instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	>0.90 – 1.00	LOS E represents the most vehicles that any particular intersection approach can accommodate. At capacity (V/C = 1.00) there may be long queues of vehicles waiting upstream of the intersection, and delays may be great (up to several signal cycles).
F	> 1.00	LOS F represents jammed conditions. Backups from location downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable. V/C values are highly variable, because full utilization of the approach may be prevented by outside conditions.

Source: Los Angeles County Metropolitan Transportation Authority, 2010



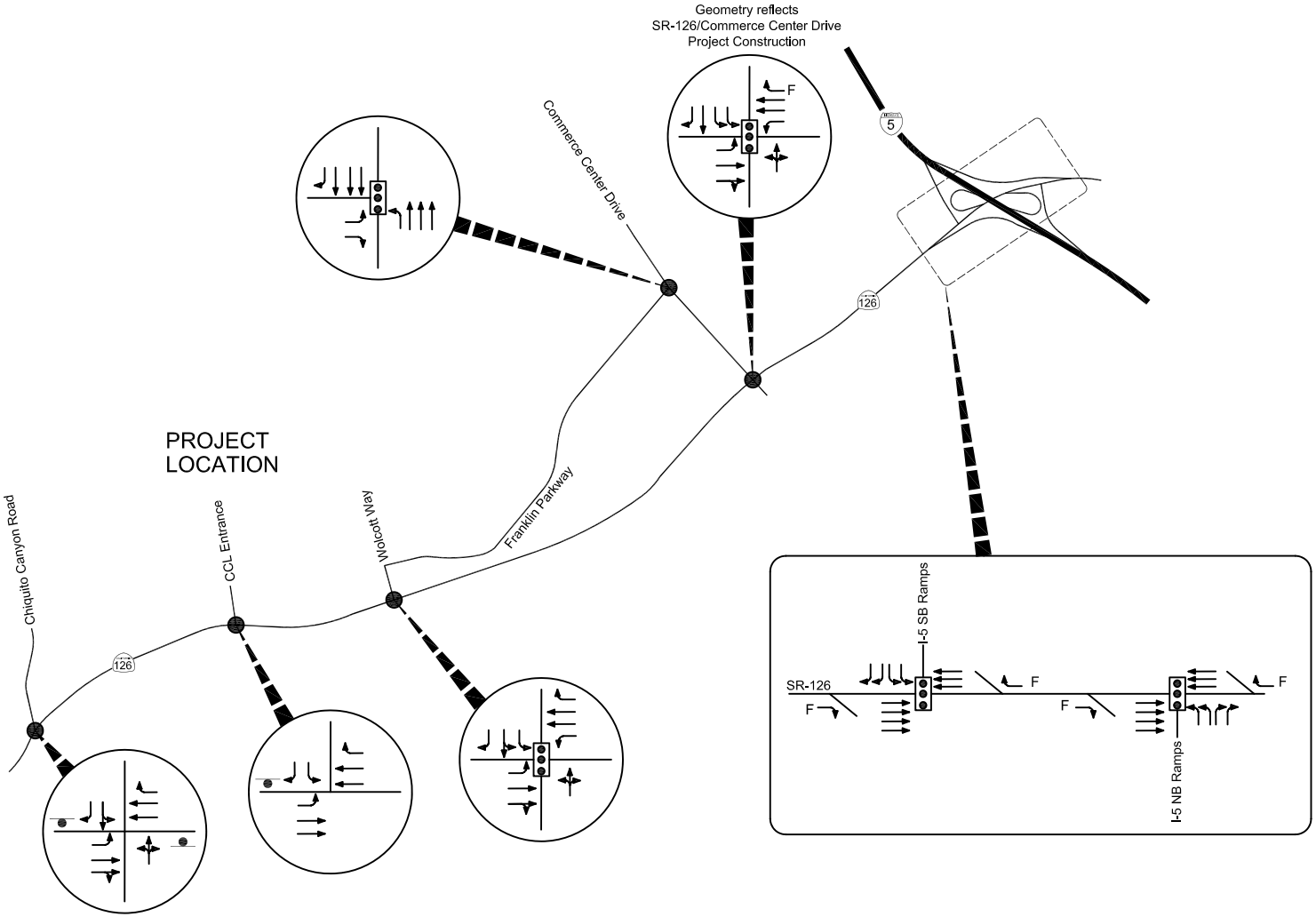
Basemap Source: ESRI

N

0 0.375 0.75

Miles

FIGURE 10-1
Vicinity Map
Chiquita Canyon Landfill
Master Plan Revision



LEGEND

F FREE MOVEMENT

STOP SIGN

SIGNALIZED INTERSECTION

N

Not to scale

FIGURE 10-2
Existing Intersection Lane Configurations
Chiquita Canyon Landfill Master Plan Revision

CH2MHILL

For comparison purposes, both the HCM and ICU analysis values are reported in the LOS summary tables. However, all impacts are assessed using the ICU methodology only. The HCM analysis is provided for Caltrans review purposes because SR-126 is a Caltrans facility.

10.3 Regulatory Setting

10.3.1 Regional and Local Regulations and Standards

10.3.1.1 Los Angeles County Congestion Management Program

The Los Angeles County CMP was established in 1992. The 1992 CMP forged new ground in linking transportation, land use, and air quality decisions for the most populous and one of the most complex urban areas in the country. The 2010 CMP is the eighth CMP adopted for Los Angeles County since the requirement became effective with the passage of Proposition 111 in 1990. The hallmark of the CMP program is that it is intended to address the impact of local growth on the regional transportation system. Compliance with the CMP requirements ensures a local jurisdiction's eligibility to compete for state gas tax funds for local transportation projects. SR-126 (also known as Henry Mayo Drive) is a CMP Highway and Roadway System arterial in the Proposed Project study area.

The Los Angeles County CMP states that "a CMP Transportation Impact Analysis (TIA) is required for all projects required to prepare an Environmental Impact Report (EIR) based on local determination." Therefore, a CMP-level analysis is required for the Proposed Project. The traffic analysis documented in this DEIR is consistent with the Guidelines for CMP Transportation Impact Analysis in Appendix D of the Los Angeles County CMP.

10.4 Regional and Local Setting

CCL is located in the northwestern portion of unincorporated Los Angeles County and is approximately 3 miles west of the I-5 and SR-126 interchange. CCL is also approximately 7 miles northwest of the city of Santa Clarita, 33 miles northwest of Downtown Los Angeles, and 18 miles east of the city of Fillmore.

10.4.1 Local Road Network

Highways and major arterial streets in the vicinity of the project site are shown in Figure 10-1 and described below. The roadway characteristics and intersection geometrics are shown in Figure 10-2.

I-5, in the vicinity of CCL, is an eight-lane north-south divided highway connecting Los Angeles, the San Fernando Valley, and the Santa Clarita Valley. A full access interchange is provided at the SR-126 and I-5 interchange, east of CCL.

SR-126, also called Henry Mayo Drive, in the vicinity of CCL, is a four-lane, undivided highway that serves east-west travel through the region. East of CCL, SR-126 provides full access to I-5. West of the landfill, SR-126 continues into Ventura County. The speed limit on SR-126, in the vicinity of the landfill, is posted at 60 miles per hour (mph), and 55 mph for autos with trailers and trucks. There is a 12-foot shoulder on both sides of SR-126 within the study area. Access to CCL is currently provided via the access road intersecting SR-126 between Chiquito Canyon Road and Wolcott Way. An existing three-leg intersection with a stop sign controls the southbound approach from the landfill access road. This road provides access only for the landfill. As part of the Proposed Project, the existing landfill entrance will be closed and a new entrance will be constructed on the corner of Wolcott Way and Franklin Parkway. Figure 10-3 illustrates the location of the existing entrance and proposed entrance to CCL. Figure 10-4 illustrates a detailed plan of the proposed entrance.

Chiquito Canyon Road is a north-south roadway west of CCL. It extends north of SR-126 with one lane in each direction. Currently there is no public access south of SR-126. The posted speed limit on Chiquito Canyon Road ranges from 30 to 35 mph.

Landfill Access Road intersects SR-126 between Chiquito Canyon Road and Wolcott Way. It is a two-lane roadway that extends north from SR-126 and provides access to CCL.

Wolcott Way is a local street east of the current access road to CCL. North of SR-126, Wolcott Way has one lane in each direction. The posted speed limit is 35 mph. A new entrance is proposed on the corner of

Wolcott Way and Franklin Parkway. Figures 10-3 and 10-4 illustrate the location and configuration of the proposed entrance.

Commerce Center Drive is a major north-south roadway with a large industrial development north of SR-126. North of SR-126, Commerce Center Drive has three lanes in each direction and a posted speed limit ranging from 40 to 45 mph. The road terminates 200 feet south of SR-126.

10.4.2 Existing Conditions

Morning and evening peak-hour turning movement traffic counts were conducted at the study intersections in March 2013 and are depicted in Figure 10-5. Copies of the traffic count data sheets are provided in Appendix G.

Existing morning and evening peak-hour operating conditions were evaluated using the HCM and ICU methodologies. The results of the existing conditions analysis are summarized in Table 10-3. Copies of intersection analysis worksheets are provided in Appendix G.

TABLE 10-3
Summary of Intersection Analysis – Existing Conditions

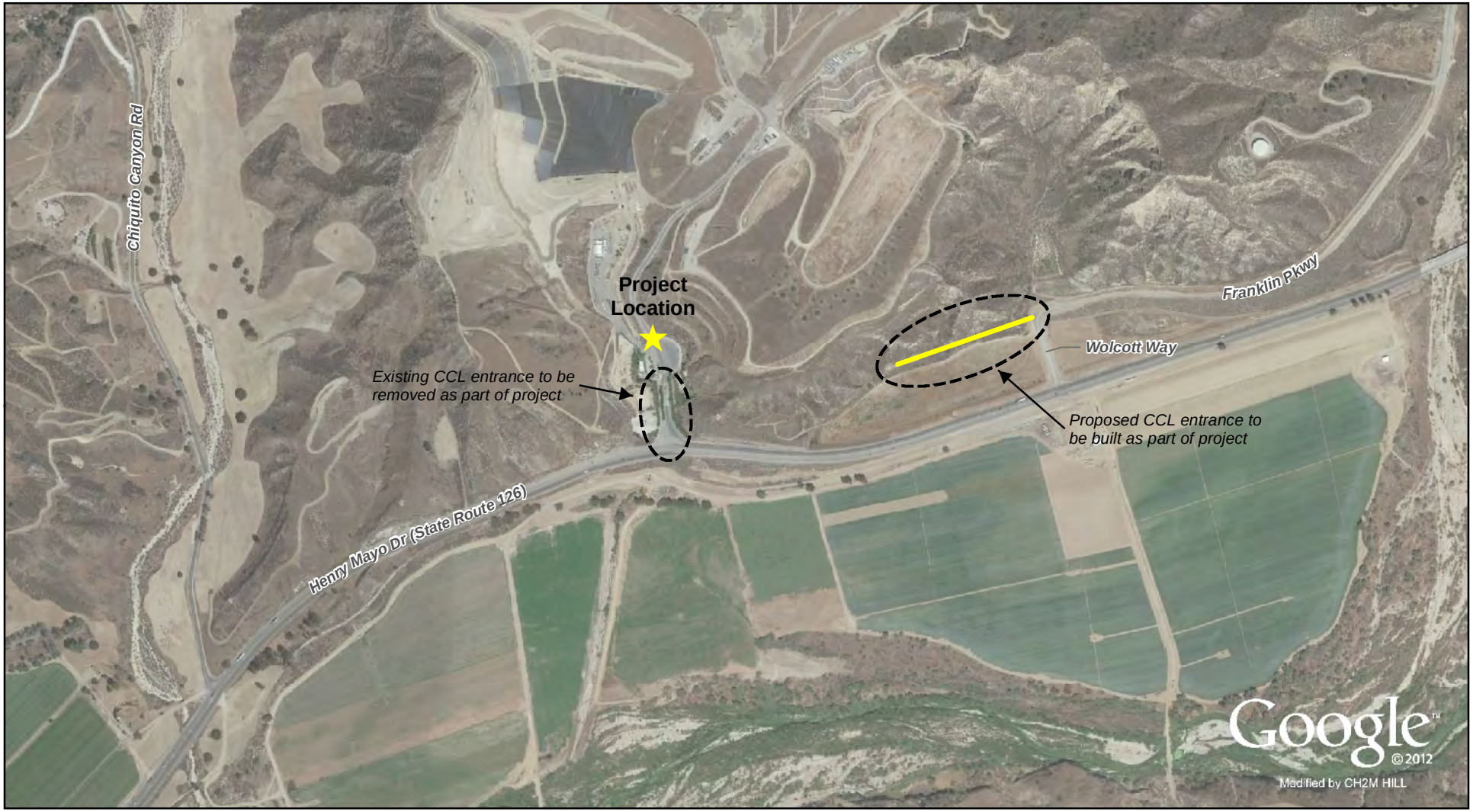
			Existing Conditions							
			A.M. Peak				P.M. Peak			
	Intersection	Control	Delay (sec/veh)	LOS	ICU	LOS	Delay (sec/veh)	LOS	ICU	LOS
1	Chiquito Canyon Road at SR-126	Unsignalized[a]	40.1	E	0.386	A	53.0	F	0.414	A
2	Chiquita Canyon Landfill Entrance at SR-126	Unsignalized[a]	23.5	C	0.355	A	38.9	E	0.421	A
3	Wolcott Way at SR-126	Signalized	13.5	B	0.357	A	26.6	C	0.415	A
4	Commerce Center Drive at SR-126	Signalized	26.4	C	0.490	A	66.7	E	0.759	C
5	I-5 Southbound Ramps at SR-126	Signalized	18.6	B	0.738	C	11.2	B	0.495	A
6	I-5 Northbound Ramps at SR-126	Signalized	24.3	C	0.532	A	25.0	C	0.425	A
7	Franklin Parkway at Commerce Center Drive	Signalized	8.8	A	0.368	A	18.2	B	0.409	A
8	Wolcott Way at Franklin Parkway	-	Intersection does not exist currently							

[a] HCM results (delay) reported for worst stop controlled approach.
Note:
sec/veh = seconds per vehicle

Table 10-3 shows that all of the study intersections are currently operating at LOS C or better using the ICU methodology. Using the HCM methodology, the following intersections currently operate at LOS E or worse:

- Chiquito Canyon Road at SR-126 (two-way stop controlled, LOS E in the a.m., LOS F in the p.m.)
- Chiquita Canyon Landfill Entrance at SR-126 (two-way stop controlled, LOS E in the p.m.)
- Commerce Center Drive at SR-126 (signalized, LOS E in the p.m.)

Peak-hour volume traffic signal warrants indicate that signals are not warranted at Chiquito Canyon Road/ SR-126 and Chiquita Canyon Landfill Entrance/SR-126 under existing conditions. Copies of the peak-hour volume warrant worksheets are provided in Appendix G.



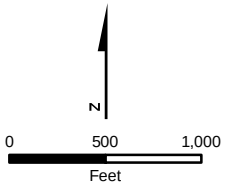


FIGURE 10-3
Existing and Proposed CCL Entrance
Chiquita Canyon Landfill
Master Plan Revision

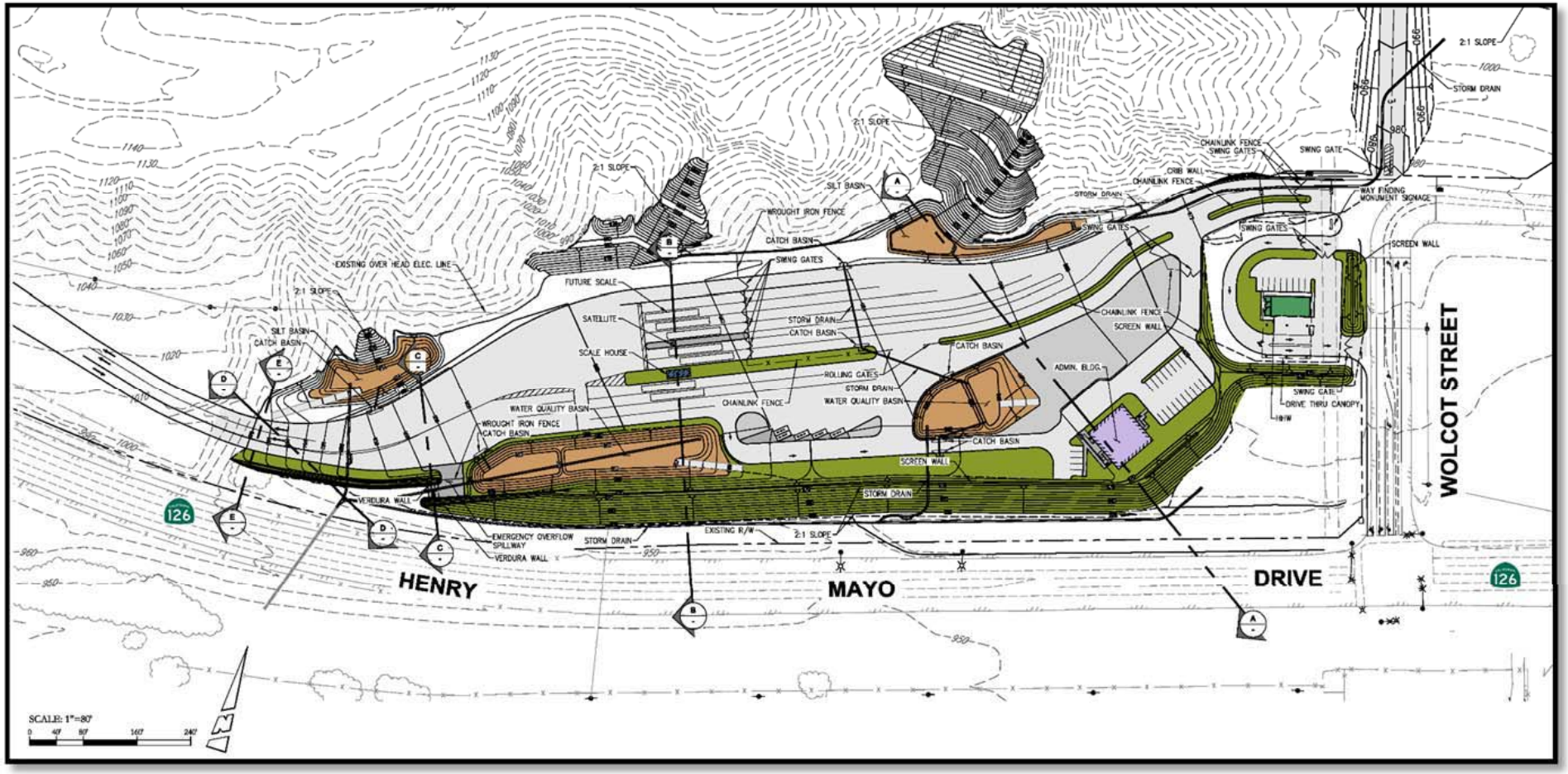


FIGURE 10-4
Proposed CCL Entrance Plan
Chiquita Canyon Landfill
Master Plan Revision

N

0 200 400
Feet

Source: J.R. Miller & Associates, 2014

CH2MHILL

ES050411114300SCO432307.11.01 CCL_Traffic_004_rev2.ai 5/14

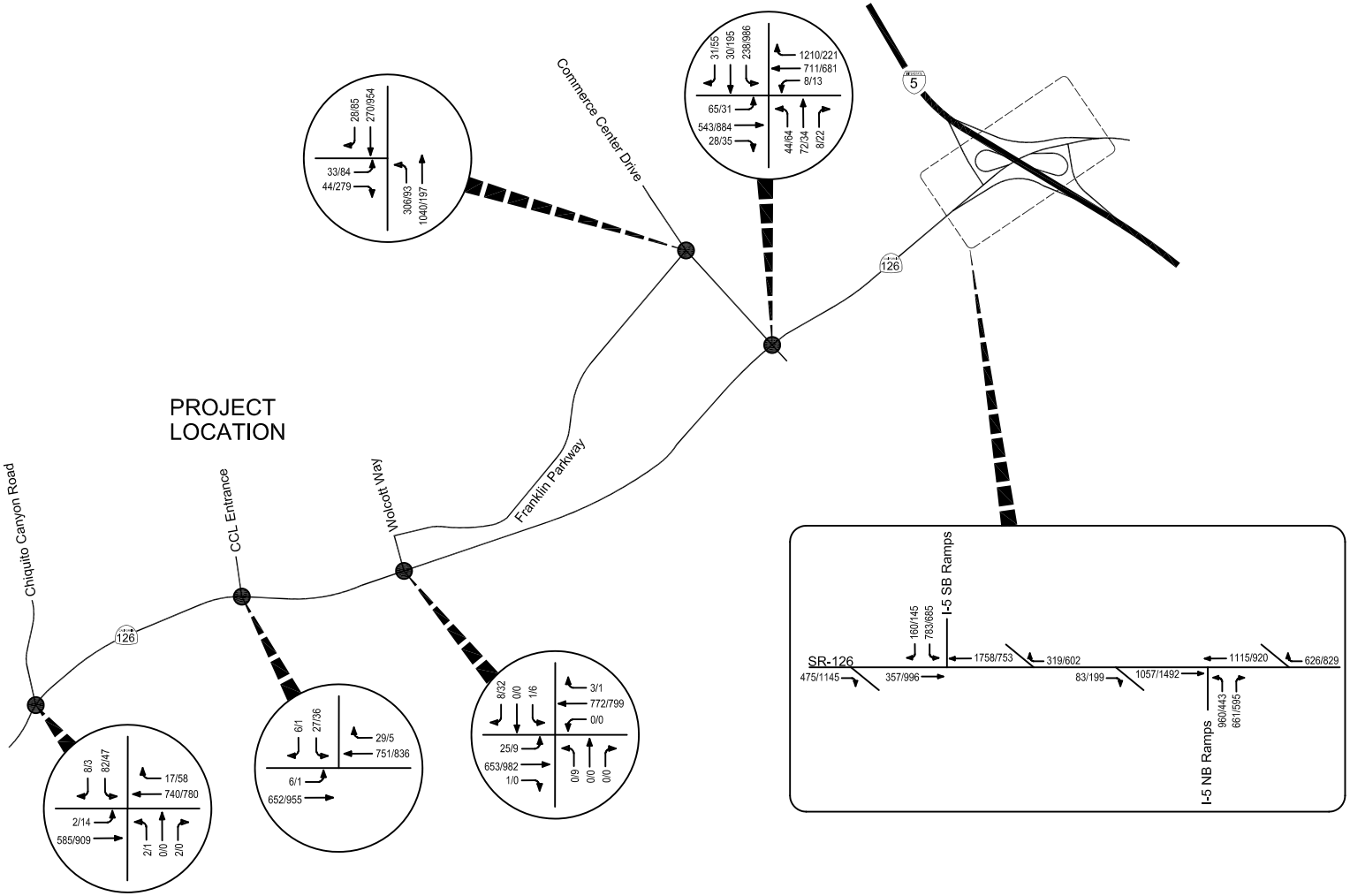


FIGURE 10-5
Existing Peak-Hour Volumes
Chiquita Canyon Landfill
Master Plan Revision

LEGEND

XX / YY AM / PM Peak-Hour Volume

N

Not to scale

CH2MHILL

ES050411114300SCO432307.11.01 CCL_Traffic_005_5/13.ai

10.4.3 Existing plus Growth Conditions

Future peak-hour traffic projections for the study intersections were developed for the buildout year of 2015. An annual ambient growth rate of 2.75 percent per year was applied to the existing (2013) traffic volumes. The annual growth rate is based upon direction received from LACDPW, Traffic and Lighting Division staff as part of the preparation of the *CCL Master Plan Revision Traffic Analysis* (Appendix G). The 2015 buildout year without project (Existing plus Growth) volumes at each of the study intersections are shown in Figure 10-6. The results of the Existing plus Growth condition analysis are summarized in Table 10-4. Morning and evening peak-hour operating conditions were evaluated using the HCM and ICU methodologies. Copies of intersection analysis worksheets are provided in Appendix G.

TABLE 10-4
Summary of Intersection Analysis – Existing plus Growth Conditions

			Existing plus Growth							
			A.M. Peak				P.M. Peak			
	Intersection	Control	Delay (sec/veh)	LOS	ICU	LOS	Delay (sec/veh)	LOS	ICU	LOS
1	Chiquito Canyon Road at SR-126	Unsignalized[a]	49.7	E	0.402	A	65.9	F	0.432	A
2	Chiquita Canyon Landfill Entrance at SR-126	Unsignalized[a]	25.7	D	0.369	A	45.5	E	0.439	A
3	Wolcott Way at SR-126	Signalized	14.2	B	0.371	A	29.2	C	0.423	A
4	Commerce Center Drive at SR-126	Signalized	27.0	C	0.546	A	71.0	E	0.852	D
5	I-5 Southbound Ramps at SR-126	Signalized	20.6	C	0.773	C	11.8	B	0.516	A
6	I-5 Northbound Ramps at SR-126	Signalized	26.3	C	0.556	A	26.7	C	0.443	A
7	Franklin Parkway at Commerce Center Drive	Signalized	9.1	A	0.383	A	19.2	B	0.426	A
8	Wolcott Way at Franklin Parkway	-	Intersection does not exist without project							

[a] HCM results (delay) reported for worst stop controlled approach.

Table 10-4 shows that all of the study intersections will operate at LOS D or better using the ICU methodology in the Existing plus Growth conditions. Using the HCM methodology, the following intersections will operate at LOS E or worse (same as existing conditions):

- Chiquito Canyon Road at SR-126 (two-way stop controlled, LOS E in the a.m., LOS F in the p.m.)
- Chiquita Canyon Landfill Entrance at SR-126 (two-way stop controlled, LOS E in the p.m.)
- Commerce Center Drive at SR-126 (signalized, LOS E in the p.m.)

Peak-hour volume traffic signal warrants indicate that signals are not warranted at Chiquito Canyon Road/ SR-126 and Chiquita Canyon Landfill Entrance/SR-126 under Existing plus Growth conditions. Copies of the peak-hour volume warrant worksheets are provided in Appendix G.

10.5 Potential Impacts

Traffic effects of the Proposed Project during construction and operational phases were evaluated to determine the potential impacts and need for mitigation.

10.5.1 Standards of Significance

Based on *California Environmental Quality Act* (*CEQA*) *Guidelines*, a significant traffic impact would occur, if the project would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

- Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Result in inadequate parking capacity.
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Based on the County of Los Angeles Department of Public Works Traffic Impact Analysis Guidelines, a significant impact occurs if the project-related increase in the V/C ratio equals or exceeds the threshold shown in Table 10-5.

TABLE 10-5
Significant Impact Thresholds for Intersections

Preproject Conditions		
LOS	**V/C**	**Project V/C Increase**
C	0.71 to 0.80	0.04 or more
D	0.81 to 0.90	0.02 or more
E/F	0.91 or more	0.01 or more

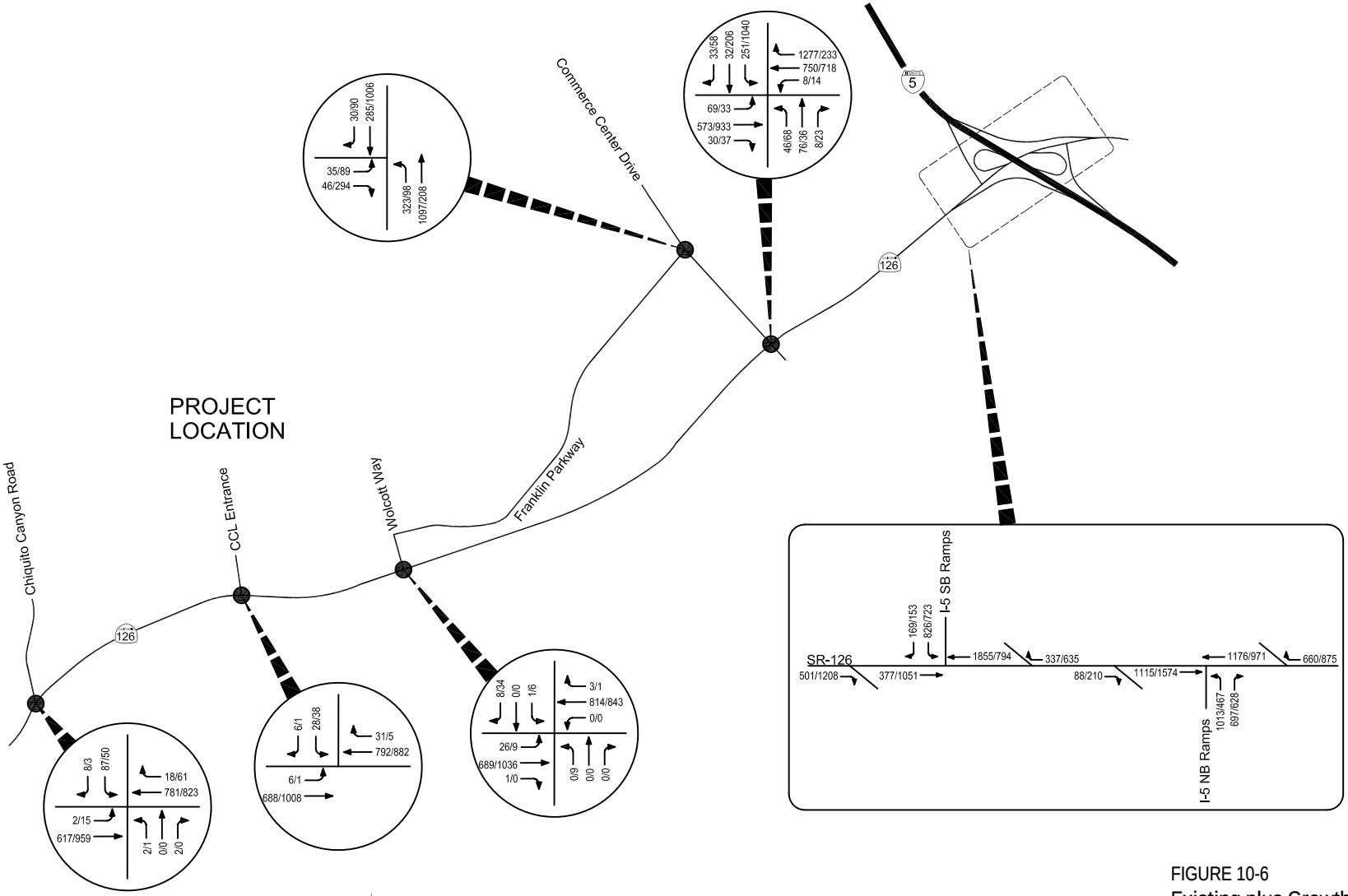
Source: Los Angeles County Department of Public Works

10.5.2 Proposed Project

The Proposed Project includes the following elements: relocated entrance and support facilities; better utilization of the landfill's potential disposal capacity through a lateral extension of the existing waste footprint and increased maximum elevation; increased daily disposal limits; acceptance of all nonhazardous wastes acceptable at a Class III solid waste disposal landfill; continued operation of the landfill; new design features; environmental monitoring; and ancillary composting operation. Parking for the Proposed Project will be provided entirely onsite. The following section describes the estimated project trip generation and distribution and evaluates the potential impacts of the Proposed Project.

10.5.2.1 Project Trip Generation

In addition to traffic at CCL that results from incoming waste, there are several other sources of inbound and outbound traffic at CCL. A wide variety of material that is diverted from the waste stream is accepted at CCL for other uses, including alternative daily cover, road base, compost, and erosion control material. Material from CCL, including clean soil, compost products, and recycled materials, may also be trucked from the site to other locations. Additionally, periodic cell construction occurs at CCL, during which time additional traffic related to construction occurs. Table 10-6 details the potential maximum daily traffic volume at CCL under existing (baseline) conditions. Table 10-7 details the potential maximum daily traffic volume at CCL under Proposed Project conditions. Table 10-8 details the potential maximum daily net new trips of the Proposed Project (i.e., Proposed Project minus baseline conditions).



LEGEND

XX / YY AM / PM Peak-Hour Volume

N

Not to scale

FIGURE 10-6
Existing plus Growth
Peak-Hour Volumes
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

TABLE 10-6
Summary of Baseline Peak Potential Daily Inbound and Outbound Traffic

Traffic Source	Number of Vehicles Peak Potential Daily[a,b]	Number of Vehicles Peak Potential Daily - PCE	Number of Trip Ends Peak Potential Daily - PCE
Inbound			
Trash (Disposal)[c]			
Transfer	273	546	1,092
Route	300	600	1,200
Roll-offs	460	920	1,840
Self Haul	500	500	1,000
Other Materials (Beneficial Reuse)			
Shredded Curbside Green Waste	40	80	160
Clean Soil	200	400	800
Contaminated Soil[d]			
Large Trucks	300	600	1,200
10-Wheelers	60	120	240
Protective Cover			
TASW	200	400	800
MRF Fines	40	80	160
Tire Shred	15	30	60
C&D Fines	25	50	100
Road Base			
Concrete	50	100	200
Asphalt	50	100	200
Processed C&D Material	30	60	120
Composting[e]	55	110	220
Outbound			
Clean Soil	100	200	400
Compost Products	8	16	32
Other	25	50	100
Special Projects[f]			
Cell Construction			
Mobilize/Demobilize Traffic	20	20	40
Contractor Employees	80	80	160
Employees			
Landfill – Permanent	34	34	68
Landfill – Temporary	25	25	50
LFGTE Plant	2	2	4
Transfer Drivers	4	4	8
Total	**2,896**	**5,127**	**10,254**

[a] These numbers are one-way trips and based on 5 days per week.
[b] The maximum number of trash vehicles in each category does not happen simultaneously. The daily maximum tonnage is still 6,000 tons per day.
[c] Regardless of actual vehicle mix, incoming waste tonnage would not exceed 6,000 tons per day per existing Conditional Use Permit (CUP) condition 9e.
[d] Contaminated soils may also be disposed and not put to beneficial reuse.
[e] The existing CUP allows for operation of up to a 560-tons-per-day composting facility for windrow or in-vessel technology composting operation.
[f] These projects occur periodically. Typically once every 2 to 3 years.
Notes:
C&D = construction and demolition
LFGTE = landfill gas-to-energy
MRF = Material Recovery Facility
PCE = passenger car equivalent
TASW = treated auto shredder waste

TABLE 10-7
Summary of Proposed Peak Potential Daily Inbound and Outbound Traffic

Traffic Source	Number of Vehicles Peak Potential Daily[a,b]	Number of Vehicles Peak Potential Daily - PCE	Number of Trip Ends Peak Potential Daily - PCE
Inbound			
Trash (Disposal)[c]			
Transfer	545	1,090	2,180
Route	600	1,200	2,400
Roll-offs	460	920	1,840
Self Haul	500	500	1,000
Other Materials (Beneficial Reuse)			
Shredded Curbside Green Waste	40	80	160
Clean Soil	200	400	800
Contaminated Soil[d]			
Large Trucks	300	600	1200
10-Wheelers	60	120	240
Protective Cover			
TASW	200	400	800
MRF Fines	40	80	160
Tire Shred	15	30	60
C&D Fines	25	50	100
Road Base			
Concrete	50	100	200
Asphalt	50	100	200
Processed C&D Material	30	60	120
Composting[e]	55	110	220
Outbound			
Clean Soil	100	200	400
Compost Products	8	16	32
Other	25	50	100
Special Projects[f]			
Cell Construction			
Mobilize/Demobilize Traffic	20	20	40
Contractor Employees	80	80	160
Employees			
Landfill – Permanent	55	55	110
Landfill – Temporary	25	25	50
LFGTE Plant	3	3	6
Transfer Drivers	4	4	8
Total	**3,490**	**6,293**	**12,586**

[a] These numbers are one-way trips and based on 5 days per week.
[b] The maximum number of trash vehicles in each category does not happen simultaneously. The daily maximum tonnage is still 12,000 tons per day.
[c] Regardless of actual vehicle mix, incoming waste tonnage would not exceed 12,000 tons per day.
[d] Contaminated soils may also be disposed and not put to beneficial reuse.
[e] The existing CUP allows for operation of up to a 560-tons-per-day composting facility for windrow or in-vessel technology composting operation.
[f] These projects occur periodically. Typically once every 2 to 3 years.

TABLE 10-8
Summary of Proposed Net New Peak Potential Daily Inbound and Outbound Traffic

Traffic Source	Number of Vehicles Peak Potential Daily[a,b]	Number of Vehicles Peak Potential Daily - PCE	Number of Trip Ends Peak Potential Daily - PCE
Inbound			
Trash (Disposal)[c]			
Transfer	272	544	1,088
Route	300	600	1,200
Roll-offs	0	0	0
Self Haul	0	0	0
Other Materials (Beneficial Reuse)			
Shredded Curbside Green Waste	0	0	0
Clean Soil	0	0	0
Contaminated Soil[d]			
Large Trucks	0	0	0
10-Wheelers	0	0	0
Protective Cover			
TASW	0	0	0
MRF Fines	0	0	0
Tire Shred	0	0	0
C&D Fines	0	0	0
Road Base			
Concrete	0	0	0
Asphalt	0	0	0
Processed C&D Material	0	0	0
Composting[e]	0	0	0
Outbound			
Clean Soil	0	0	0
Compost Products	0	0	0
Other	0	0	0
Special Projects[f]			
Cell Construction			
Mobilize/Demobilize Traffic	0	0	0
Contractor Employees	0	0	0
Employees			
Landfill – Permanent	21	21	42
Landfill – Temporary	0	0	0
LFGTE Plant	1	1	2
Transfer Drivers	0	0	0
Total	**594**	**1,166**	**2,332**

[a] These numbers are one-way trips and based on 5 days per week.
[b] The maximum number of trash vehicles in each category does not happen simultaneously. The daily maximum tonnage is still 12,000 tons per day.
[c] Regardless of actual vehicle mix, incoming waste tonnage would not exceed 12,000 tons per day.
[d] Contaminated soils may also be disposed and not put to beneficial reuse.
[e] The existing CUP allows for operation of up to a 560-tons-per-day composting facility for windrow or in-vessel technology composting operation.
[f] These projects occur periodically. Typically once every 2 to 3 years.

Tables 10-6 through 10-8 are based on historical records for different vehicle and material types and represent a typical day of CCL operations. Also, Tables 10-6 through 10-8 summarize the project trips in passenger car equivalents. A passenger car equivalent factor of 2.0 was used to convert truck trips to passenger car equivalents. Based on Table 10-8, the Proposed Project is estimated to generate 2,332 net new trips.

Because these values were determined on a daily basis, it was necessary to convert the data into peak-hour trips. Peak-hour project trips for a.m. and p.m. (net new trips) were developed to reflect the peak of the surrounding road network (1 hour between 7 a.m. and 9 a.m. and 1 hour between 4 p.m. and 6 p.m.). Peak-hour project trips were developed with historical time-of-day gate receipt data collected by CCL. Table 10-9 summarizes time-of-day vehicle count information for a typical weekday at CCL in April 2013. Based on the historical data presented in Table 10-9, approximately 6.4 percent of the net new trips for the Proposed Project will occur in the a.m. peak hour (8 a.m. to 9 a.m.), and 6.5 percent will occur in the p.m. peak hour (4 p.m. to 5 p.m.). The majority of the net new trips will occur outside the peak hours of the surrounding roadway system.

TABLE 10-9
Chiquita Canyon Landfill Time-of-Day Vehicle Distribution Based on Historical Gate Receipts

Time of Day	Inbound Vehicles	Outbound Vehicles
12:00 a.m. to 1:00 a.m.	3	3
1:00 a.m. to 2:00 a.m.	2	2
2:00 a.m. to 3:00 a.m.	5	5
3:00 a.m. to 4:00 a.m.	7	7
4:00 a.m. to 5:00 a.m.	21	21
5:00 a.m. to 6:00 a.m.	21	21
6:00 a.m. to 7:00 a.m.	19	19
7:00 a.m. to 8:00 a.m.	27	27
8:00 a.m. to 9:00 a.m.	30	30
9:00 a.m. to 10:00 a.m.	41	41
10:00 a.m. to 11:00 a.m.	57	57
11:00 a.m. to 12:00 p.m.	47	47
12:00 p.m. to 1:00 p.m.	34	34
1:00 p.m. to 2:00 p.m.	32	32
2:00 p.m. to 3:00 p.m.	38	38
3:00 p.m. to 4:00 p.m.	36	36
4:00 p.m. to 5:00 p.m.	31	31
5:00 p.m. to 6:00 p.m.	0	0
6:00 p.m. to 7:00 p.m.	0	0
7:00 p.m. to 8:00 p.m.	0	0
8:00 p.m. to 9:00 p.m.	0	0
9:00 p.m. to 10:00 p.m.	0	0
10:00 p.m. to 11:00 p.m.	11	11
11:00 p.m. to 12:00 a.m.	10	10
Daily Total	**472**	**472**

Note:
Data based on 3-day weekday average collected in April 2013. Data represents actual vehicles entering the site (not PCEs).

10.5.2.2 Project Trip Distribution and Assignment

The historical gate receipt information for CCL, which also showed the origin and destination of incoming and outgoing trucks, was used to determine the project trip distribution for the Proposed Project. The Proposed Project trip distribution is shown in Figure 10-7. Based on the trip distribution patterns, the Proposed Project trips (net new trips) that will be added to the street system were calculated and are shown in Figure 10-8. The Proposed Project will remove the existing CCL entrance and construct a new entrance on the corner of Wolcott Way and Franklin Parkway. Therefore, there will be a change in traffic patterns at the intersection of SR-126 and Wolcott Way because all CCL trips (existing and net new trips) will access the site via Wolcott Way. It is assumed that the new entrance will operate as an all-way stop controlled intersection at Wolcott Way and Franklin Parkway. These changes are noted in Figure 10-8. Additional discussion and analysis of the new entrance is provided in Section 10.5.2.5.

10.5.2.3 Existing plus Growth plus Project Conditions

Project traffic volumes were added to the 2015 buildout year conditions (Existing plus Growth) to assess potential traffic impacts. The resulting Existing plus Growth plus Project traffic volumes are shown in Figure 10-9. The study intersections were re-analyzed with the traffic volumes to determine the Proposed Project's impact on peak-hour intersection operations. Table 10-10 is a summary of Existing plus Growth conditions with and without the project. The table also indicates whether or not the Proposed Project has a significant impact at any of the study intersections. Copies of intersection analysis worksheets are provided in Appendix G. Table 10-10 shows that all study intersections will operate at LOS D or better using the ICU methodology in Existing plus Growth plus Project conditions. Using the HCM methodology, the following intersections will operate at LOS E or worse:

- Chiquito Canyon Road at SR-126 (two-way stop controlled, LOS F in the a.m. and in the p.m.)
- Commerce Center Drive at SR-126 (signalized, LOS E in the p.m.)

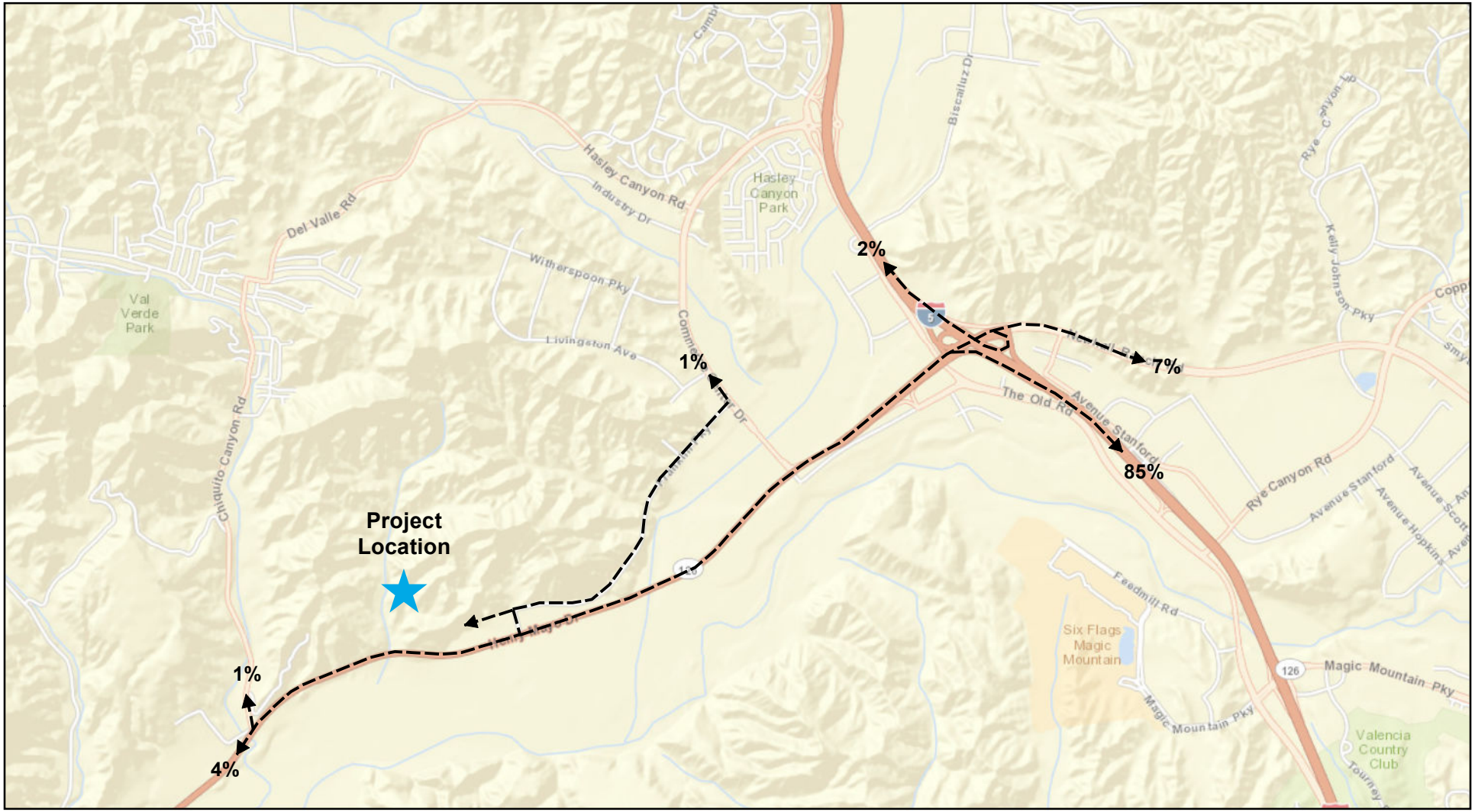
The Proposed Project will have a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. However, the intersection of Commerce Center Drive and SR-126 will still be under construction in 2015 as part of the Commerce Center Drive/SR-126 improvement project. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection (interchange) will return operations to LOS D or better in both the morning and evening peak hours. Therefore, no mitigation is required of the CCL project since mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project.

Peak-hour volume traffic signal warrants indicate that signals are not warranted at Chiquito Canyon Road/ SR-126 under Existing plus Growth plus Project conditions. Copies of the peak-hour volume warrant worksheets are provided in Appendix G.

10.5.2.4 I-5 Freeway Ramp Queuing Analysis

Queue lengths at the northbound and southbound I-5 off-ramps were examined to evaluate whether or not adequate storage is available to accommodate peak-hour traffic with the Proposed Project. Table 10-11 reports the available I-5 northbound and southbound off-ramp storage at SR-126 and the anticipated queue lengths for the Existing conditions, Existing plus Growth conditions, and the Existing plus Growth plus Project conditions.

The queue lengths reported in Table 10-11 represent the 95th percentile queue length as calculated in Synchro. The worse peak-hour queue length is reported.



Basemap Source: ESRI

LEGEND

XX% Project Distribution (to/from distribution assumed to be identical)

N

0 0.3 0.6

Miles

FIGURE 10-7
Proposed Project Trip Distribution
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

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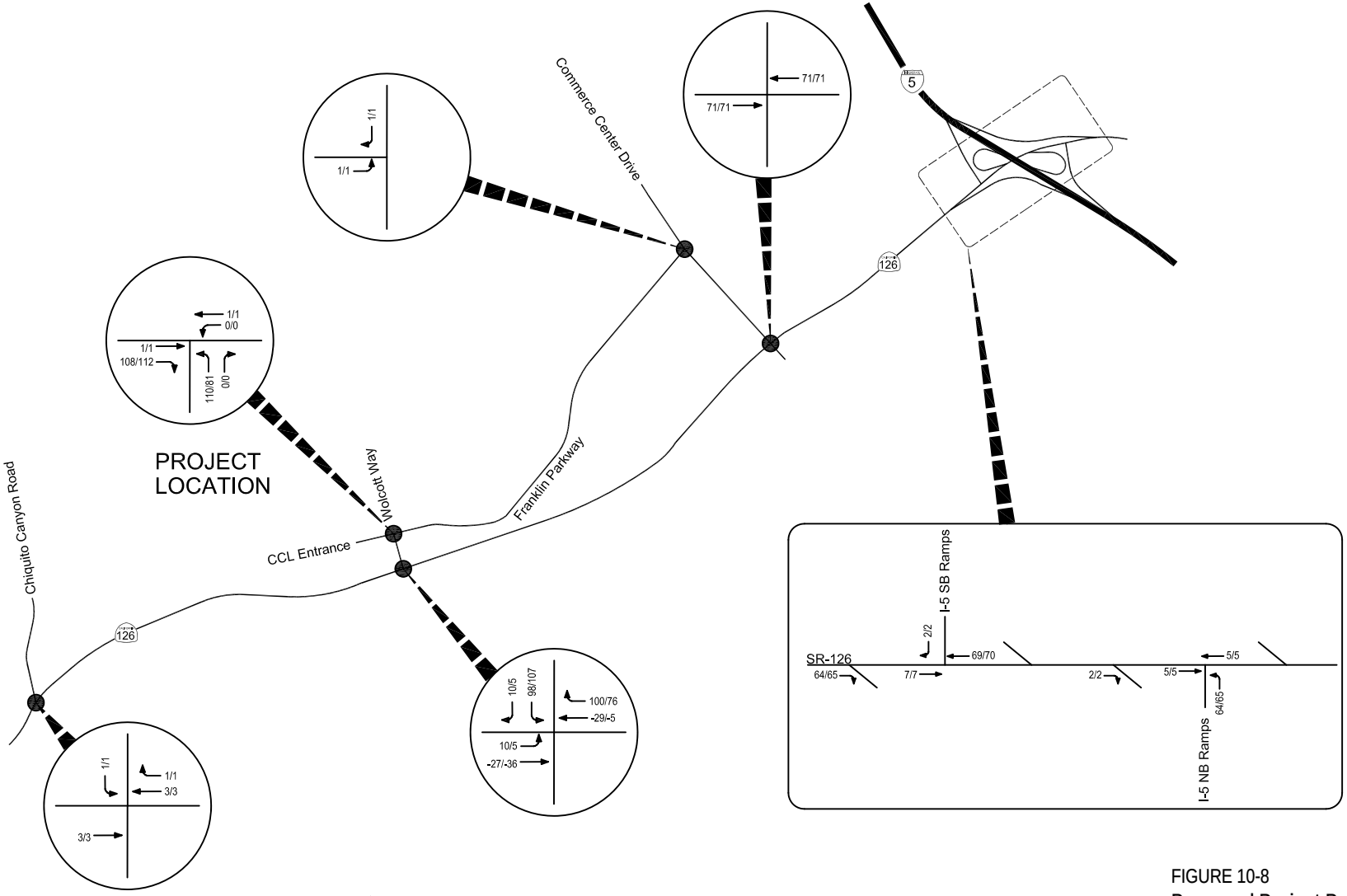


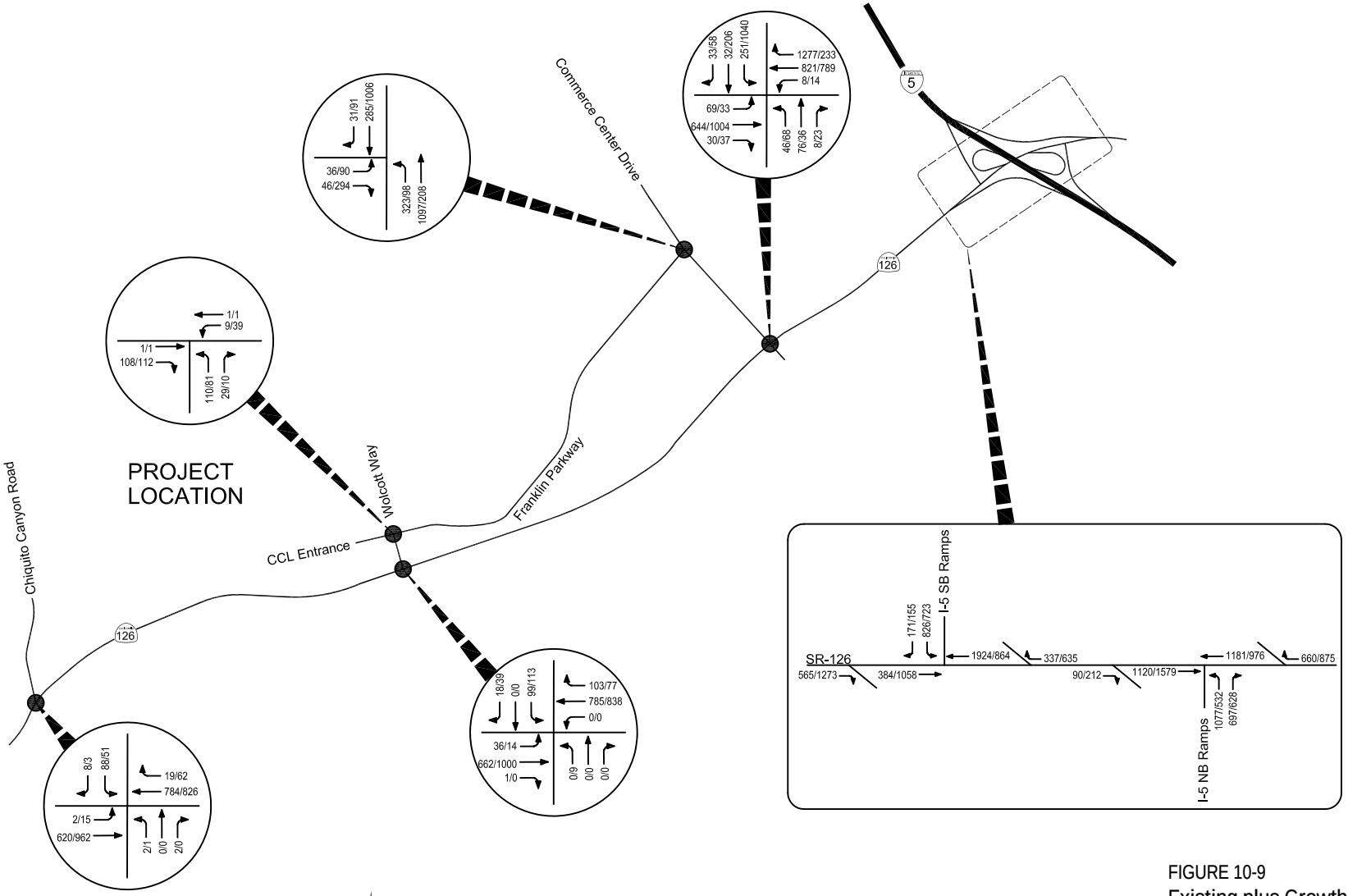
LEGEND

XX / YY AM / PM Peak-Hour Volume (PCEs)

N

Not to scale

FIGURE 10-8
Proposed Project Peak-Hour Trips
Chiquita Canyon Landfill
Master Plan Revision



LEGEND

XX / YY AM / PM Peak-Hour Volume

N

Not to scale

FIGURE 10-9
Existing plus Growth plus Project Peak Hour Volumes
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

TABLE 10-10
Summary of Intersection Analysis – Existing plus Growth plus Project Conditions

			Existing plus Growth Conditions								Existing plus Growth plus Project Conditions									
			A.M. Peak				P.M. Peak				A.M. Peak					P.M. Peak				
	Intersection	Control	Delay (sec/veh)	LOS	ICU	LOS	Delay (sec/veh)	LOS	ICU	LOS	Delay (sec/veh)	LOS	ICU	LOS	Significant Impact?	Delay (sec/veh)	LOS	ICU	LOS	Significant Impact?
1	Chiquito Canyon Road at SR-126	Unsignalized[a]	49.7	E	0.402	A	65.9	F	0.432	A	50.8	F	0.404	A	No	68.0	F	0.433	A	No
2	Chiquita Canyon Landfill Entrance at SR-126	Unsignalized[a]	25.7	D	0.369	A	45.5	E	0.439	A	Intersection does not exist with project									
3	Wolcott Way at SR-126	Signalized	14.2	B	0.371	A	29.2	C	0.432	A	13.6	B	0.409	A	No	27.3	C	0.465	A	No
4	Commerce Center Drive at SR-126	Signalized	27.0	C	0.546	A	71.0	E	0.852	D	28.1	C	0.568	A	No	73.9	E	0.875	D	**Yes**
5	I-5 Southbound Ramps at SR-126	Signalized	20.6	C	0.773	C	11.8	B	0.516	A	21.1	C	0.788	C	No	12.0	B	0.531	A	No
6	I-5 Northbound Ramps at SR-126	Signalized	26.3	C	0.556	A	26.7	C	0.443	A	26.2	C	0.570	A	No	26.5	C	0.458	A	No
7	Franklin Parkway at Commerce Center Drive	Signalized	9.1	A	0.383	A	19.2	B	0.426	A	9.1	A	0.384	A	No	19.2	B	0.427	A	No
8	Wolcott Way at Franklin Parkway	Unsignalized[b]	Intersection does not exist without project								7.8	A	0.206	A	No	8.0	A	0.199	A	No

[a] HCM results (delay) reported for worst stop controlled approach.

[b] HCM results (delay) reported for overall stop controlled intersection.

Review of the anticipated 95th percentile queue lengths in Table 10-11 shows that the peak-hour queue lengths do not exceed the available off-ramp storage in any of the scenarios analyzed.

TABLE 10-11
Interstate 5 Off-Ramp Queue Analysis at State Route 126

Intersection	Available Off-Ramp Storage Length (feet)	Existing Conditions Queue Length (feet)	Existing plus Growth Conditions Queue Length (feet)	Existing plus Growth plus Project Conditions Queue Length (feet)
I-5 southbound off-ramp and SR-126	1,600	237	281	281
I-5 northbound off-ramp and SR-126	1,300	507	556	556

10.5.2.5 Project Site Queuing Analysis

The Proposed Project will remove the existing CCL entrance, which is currently located on SR-126 between Chiquito Canyon Road and Wolcott Way, and construct a new entrance on the corner of Wolcott Way and Franklin Parkway. Figure 10-4 illustrates the location of the existing entrance and proposed entrance to CCL. Figure 10-5 illustrates a detailed plan of the proposed entrance. It is assumed that the new entrance will operate as an all-way stop controlled intersection at Wolcott Way and Franklin Parkway.

The new entrance of the CCL facility will bring vehicles to the site from Wolcott Way/Franklin Parkway. Vehicles will enter the site and drive westbound to the scales and gatehouses located approximately 900 feet west of the intersection of Wolcott Way and Franklin Parkway.

Main Entrance

A queuing analysis was completed for the main entrance to confirm that the projected traffic resulting from the Proposed Project will not queue through the Wolcott Way/Franklin Parkway intersection. The following assumptions were used in the queue calculations:

- The distance between the Wolcott Way and the limit line where vehicles must wait to enter the scales is 900 feet.
- There are two lanes of storage between the limit line where vehicles must wait to enter the scales and Wolcott Street (site entrance). The two lanes provide a total of 1,800 feet of storage.
- A third lane extends from the limit line to approximately 480 feet east.
- A fourth lane extends from the limit line to approximately 290 feet east.
- A fifth lane extends from the limit line to approximately 200 feet east.
- A sixth lane extends from the limit line to approximately 130 feet east.
- The combined storage of the four lanes is 2,900 feet.
- The average vehicle length is assumed to be 50 feet (truck).
- The proposed entrance can store 58 vehicles (50 feet per vehicle) at any given time.
- Based on historical gate receipt data, the average wait time at the scales is 1 minute per vehicle.
- The proposed entrance will have four scales on opening day. Each scale can process 60 vehicles per hour based on historical data. This will allow the Proposed Project entrance to process approximately 240 vehicles per hour (4 vehicles per minute).

- CCL is permitted to be open 24 hours per day, 6 days per week. This provides CCL the operational flexibility to coordinate with customers and arrange to be open when loads are anticipated. Therefore, there are never extended periods of time when vehicles would not be processed through the scales and forced to queue without release. Table 10-11 shows that historically there are no trips between 5:00 p.m. and 10:00 p.m. This is because CCL customers have historically not arranged to bring loads during this time. If needed, CCL would serve customers during this time as well.
- The vehicle arrival rate is typically spread out over the course of each hour. However, a peak 15-minute analysis was completed to analyze a worst-case scenario. A peak-hour factor (PHF) of 0.95 was used to generate the anticipated peak 15-minute arrival rate. The PHF of 0.95 was selected because this is consistent with the PHF observed on SR-126 in the study area during the peak periods (Appendix G). This type of analysis will project the worst-case queue length at the CCL entrance.

Table 10-12 summarizes the results of queue calculations for the projected CCL traffic that will arrive over the course of a typical day, based on the factors above. The analysis shows that the storage provided at the new CCL entrance will be able to accommodate the projected number of vehicles arriving to the site throughout the day. In addition, the peak 15-minute analysis shows that the provided storage also will accommodate the peak periods within each hour and not queue through the Wolcott Way/ Franklin Parkway intersection. Therefore, the proposed CCL entrance will provide enough storage to accommodate projected CCL traffic without queuing onto public roadways.

Intersection spacing on Wolcott Way between Franklin Parkway and SR-126 was also evaluated to assess the available storage for queuing on Wolcott Way. When the proposed CCL entrance is constructed, there will be approximately 450 feet of storage on Wolcott Way between SR-126 and Franklin Parkway/CCL entrance. Peak-hour intersection analysis shows that the northbound queue at Wolcott Way/Franklin Parkway and the southbound queue at Wolcott Way/SR-126 will not exceed 100 feet in either peak hour. Therefore, there is adequate storage on Wolcott Way to accommodate the increase in traffic due to the proposed CCL entrance.

Household Hazardous Waste Facility Entrance

As shown in Figure 10-4, the Proposed Project will build a Household Hazardous Waste Facility (HHWF) located immediately south of the main entrance to CCL (west of Wolcott Way). Drivers will enter the CCL main entrance and turn left to enter the HHWF through a two-way driveway located immediately west of Wolcott Way. Upon completion of their drop-off at the HHWF, drivers will exit through the same driveway they came in and turn right to exit through the CCL main driveway.

TABLE 10-12
Summary of Queuing Analysis at Proposed Chiquita Canyon Landfill Main Entrance

	(A)	(B)		(C)	(D)	
Time of Day	**Hourly Processing Rate (veh/hour)[a]**	**Total Inbound Vehicles per hour**	**Will Queue Exceed Storage (Is B > A)?**	**Peak 15-Minute Processing Rate (veh/15-minute)[b]**	**Total Inbound Vehicles per peak 15 minutes[c]**	**Will Queue Exceed Storage (Is D > C)?**
12:00 a.m. to 1:00 a.m.	240	10	No	60	3	No
1:00 a.m. to 2:00 a.m.	240	7	No	60	2	No
2:00 a.m. to 3:00 a.m.	240	17	No	60	4	No
3:00 a.m. to 4:00 a.m.	240	24	No	60	6	No
4:00 a.m. to 5:00 a.m.	240	73	No	60	19	No
5:00 a.m. to 6:00 a.m.	240	73	No	60	19	No
6:00 a.m. to 7:00 a.m.	240	66	No	60	17	No
7:00 a.m. to 8:00 a.m.	240	94	No	60	25	No
8:00 a.m. to 9:00 a.m.	240	104	No	60	27	No
9:00 a.m. to 10:00 a.m.	240	142	No	60	37	No
10:00 a.m. to 11:00 a.m.	240	198	No	60	52	No
11:00 a.m. to 12:00 p.m.	240	163	No	60	43	No
12:00 p.m. to 1:00 p.m.	240	118	No	60	31	No
1:00 p.m. to 2:00 p.m.	240	111	No	60	29	No
2:00 p.m. to 3:00 p.m.	240	132	No	60	35	No
3:00 p.m. to 4:00 p.m.	240	125	No	60	33	No
4:00 p.m. to 5:00 p.m.	240	108	No	60	28	No
5:00 p.m. to 6:00 p.m.	240	0	No	60	0	No
6:00 p.m. to 7:00 p.m.	240	0	No	60	0	No
7:00 p.m. to 8:00 p.m.	240	0	No	60	0	No
8:00 p.m. to 9:00 p.m.	240	0	No	60	0	No
9:00 p.m. to 10:00 p.m.	240	0	No	60	0	No
10:00 p.m. to 11:00 p.m.	240	38	No	60	10	No
11:00 p.m. to 12:00 a.m.	240	35	No	60	9	No

[a] Number of 50-foot vehicles that can be processed per hour at CCL entrance without queuing through MRF entrance road.
[b] Number of 50-foot vehicles that can be processed per 15-minutes at CCL entrance without queuing through MRF entrance road.
[c] Assumes a peak hour factor of 0.95 to calculate the peak 15-minute arrival rate.
Yellow highlighting indicates peak arrival rate of CCL.

Queuing calculations were also done for the HHWF driveway to determine how many vehicles the HHWF can accommodate on a typical event day without queuing through the CCL main entrance. The following assumptions were used in the queue calculations:

- The HHWF will be a permanent center that offers a twice-a-month service, between the hours of 9:00 am and 3:00 pm (off-peak hours of the surrounding road network).
- The peak arrival period for the HHWF is between 9:00 am and 11:00 am.
- It takes approximately 10 minutes per car to unload.
- The entrance driveway for the HHWF provides 680 feet of storage.
- The average vehicle length is assumed to be 25 feet (passenger car).
- The proposed entrance can store 27 vehicles (25 feet per vehicle) at any given time.
- The proposed drop-off area has two lanes and can process six cars at one time (three cars in each lane). Given the average unload time of 10 minutes per car, the drop-off area can process 36 cars per hour.

Table 10-13 summarizes the results of the queue calculations. The analysis shows that the HHWF can accommodate up to 243 vehicles on a typical event day without queuing through the CCL main entrance.

It is important to note that if the HHWF event day occurs on a weekday, the HHWF traffic will mix with the CCL truck traffic as they both enter the project site. As shown in Figure 10-4, the left-turn pocket into the HHWF will ensure that HHWF traffic does not block truck traffic entering the site and continuing west to the CCL scales. Based on the queueing analysis summarized in Table 10-13, it can also be concluded that truck traffic is not projected to queue and block the entrance to the HHWF since the number of projected trucks entering CCL will never exceed the service rate at the scales.

TABLE 10-13
Summary of Queuing Analysis at Proposed CCL HHWF Entrance

Time of Day	Arrival Rate (veh per 10 mins)	Processing Rate (veh per 10 mins)	Queue at end of this period (veh)	Queue at end of this period (ft)	Available Storage (ft)	Will Demand Exceed Storage?
9:10 a.m.	7	6	1.0	25	680	No
9:20 a.m.	7	6	2.0	50	680	No
9:30 a.m.	8	6	4.0	100	680	No
9:40 a.m.	8	6	6.0	150	680	No
9:50 a.m.	8	6	8.0	200	680	No
10:00 a.m.	8	6	10.0	250	680	No
10:10 a.m.	8	6	12.0	300	680	No
10:20 a.m.	8	6	14.0	350	680	No
10:30 a.m.	8	6	16.0	400	680	No
10:40 a.m.	8	6	18.0	450	680	No
10:50 a.m.	8	6	20.0	500	680	No
11:00 a.m.	8	6	22.0	550	680	No
11:10 a.m.	7	6	23.0	575	680	No
11:20 a.m.	7	6	24.0	600	680	No
11:30 a.m.	7	6	25.0	625	680	No
11:40 a.m.	7	6	26.0	650	680	No
11:50 a.m.	7	6	27.0	675	680	No
12:00 p.m.	6	6	27.0	675	680	No
12:10 p.m.	6	6	27.0	675	680	No
12:20 p.m.	6	6	27.0	675	680	No
12:30 p.m.	6	6	27.0	675	680	No

TABLE 10-13
Summary of Queuing Analysis at Proposed CCL HHWF Entrance

Time of Day	Arrival Rate (veh per 10 mins)	Processing Rate (veh per 10 mins)	Queue at end of this period (veh)	Queue at end of this period (ft)	Available Storage (ft)	Will Demand Exceed Storage?
12:40 p.m.	6	6	27.0	675	680	No
12:50 p.m.	6	6	27.0	675	680	No
1:00 p.m.	6	6	27.0	675	680	No
1:10 p.m.	6	6	27.0	675	680	No
1:20 p.m.	6	6	27.0	675	680	No
1:30 p.m.	6	6	27.0	675	680	No
1:40 p.m.	6	6	27.0	675	680	No
1:50 p.m.	6	6	27.0	675	680	No
2:00 p.m.	6	6	27.0	675	680	No
2:10 p.m.	6	6	27.0	675	680	No
2:20 p.m.	6	6	27.0	675	680	No
2:30 p.m.	6	6	27.0	675	680	No
2:40 p.m.	6	6	27.0	675	680	No
2:50 p.m.	6	6	27.0	675	680	No
3:00 p.m.	6	6	27.0	675	680	No
Total Number of Vehicles	243	**Maximum Queue Length (ft)**		675	**Will Queue Exceed Storage**	No

10.5.2.6 Traffic Index Calculations

The traffic index (TI) is a measure of the deteriorating effects that truck traffic has on asphalt concrete pavement. TI calculations were performed along Wolcott Way and SR-126 for the project. TI calculations were performed in accordance with the *County of Los Angeles Department of Public Works, Traffic Index Guidelines* (LACDPW, 2002). Ten-year TI calculations were performed for both Wolcott Way and SR-126 in the study area. Table 10-14 summarizes the 10-year TI calculations for 2014 conditions with and without the Proposed Project. Table 10-15 summarizes the 20-year TI calculations for 2014 conditions with and without the project. These comparisons help to understand the effect that Proposed Project traffic will have on pavement deterioration. TI worksheets are provided in Appendix G.

The TI calculations show that the Proposed Project will have no effect on the 10-year or 20-year TIs for SR-126. The increase in truck traffic on SR-126 with the Proposed Project is minimal compared to the amount of truck traffic already using SR-126. On Wolcott Way, the Proposed Project will increase the 10-year TI from 7.5 to 9.0 and the 20-year TI from 8.0 to 10.0. This is expected because the location of the new landfill entrance will increase the amount of truck traffic on Wolcott Way.

TABLE 10-14
Summary of 10-Year Traffic Index Calculations

Roadway	10-Year TI Based on 2014 without Project Volumes	10-Year TI Based on 2014 with Project Volumes
SR-126 between Wolcott Way and Commerce Center Drive	12.0	12.0
Wolcott Way between SR-126 and Franklin Parkway	7.5	9.0

TABLE 10-15
Summary of 20-Year Traffic Index Calculations

Roadway	20-Year TI Based on 2014 without Project Volumes	20-Year TI Based on 2014 with Project Volumes
SR-126 between Wolcott Way and Commerce Center Drive	13.5	13.5
Wolcott Way between SR-126 and Franklin Parkway	8.0	10.0

10.5.2.7 Summary

Based on the analysis above, the Proposed Project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system; substantially increase hazards due to a design feature; result in inadequate emergency access or parking capacity; or conflict with adopted policies, plans, or programs supporting alternative transportation. The Proposed Project would exceed a LOS standard established by the regulatory agency. All of the study intersections will operate at LOS D or better (using the ICU methodology) in Existing plus Growth plus Project conditions and will not exceed the Los Angeles County traffic impact thresholds. However, the Proposed Project will have a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. The intersection of Commerce Center Drive and SR-126 will be under construction in 2015 as part of the Commerce Center Drive/SR-126 improvement project. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection will return operations to LOS D or better during both peak hours. Therefore, no mitigation is required of the CCL project since mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project.

Review of the queue lengths at the northbound and southbound I-5 off-ramps shows that the peak-hour queue lengths do not exceed the available off-ramp storage in Existing plus Growth plus Project conditions. There would be no impact.

The project entrance is proposed to improve access to the site and will not substantially increase hazards due to a design feature or affect emergency access to the site or any other property. The queuing analysis shows that the storage provided at the CCL main entrance will be able to accommodate the projected number of vehicles arriving to the site throughout the day and will provide enough storage to accommodate projected CCL traffic without queuing onto public roadways. Queuing calculations were also done for the HHWF driveway. The analysis shows that the HHWF can accommodate up to 243 vehicles on a typical event day without queuing through the CCL main entrance driveway.

Intersection spacing on Wolcott Way between Franklin Parkway and SR-126 was also evaluated and it was determined that the northbound queue at Wolcott Way/ Franklin Parkway and the southbound queue at Wolcott Way/SR-126 will not exceed 100 feet in either peak hour. Adequate storage exists on Wolcott Way to accommodate the increase in traffic due to the proposed CCL entrance.

Sufficient parking will be provided onsite to meet the anticipated parking needs of the project. No offsite parking is needed. As a result, the project will not result in impacts to parking capacity. Finally, the Proposed Project will not conflict with adopted policies, plans, or programs supporting alternative transportation as there will be no changes related to alternative transportation. Construction of the Proposed Project will occur entirely onsite and will not affect transit, bicycle facilities or other forms of alternative transportation.

10.6 Interim Condition

At the request of LACDPW, the interim condition impact analysis considers the combined traffic impacts of the Proposed Project (in addition to the ambient growth rate) with a subset of the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis. For the purposes of this interim condition impact analysis, the subset of the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis, includes any project that has already been approved but is not yet constructed, or any project that is in

the application process and is a reasonably foreseeable development. The projects currently planned or proposed in the cumulative impact area of the Proposed Project were provided by the Los Angeles County Department of Regional Planning (LADRP). The cumulative project information is based on the best information available at the time this DEIR was prepared. Two projects were identified and are summarized in Table 10-16. The location of each of these projects and their associated trip distribution information is attached in Appendix G. Cumulatively, the other development have the potential to generate a total of 919 trips in the morning peak hour, and 1,249 trips in the evening peak hour by 2015 in the vicinity of the project.

Traffic from the other development projects was assigned to the study intersections by referencing the traffic studies for each project. The assumed trip distribution of each of these projects through the study area is also included in Appendix G. The total combined traffic generated in the Cumulative condition (Existing plus Growth plus Other Development traffic) at each of the study intersections is shown in Figure 10-10.

TABLE 10-16
Summary of Other Development Land Use and Trip Generation

Project					Peak Hour					
					AM			PM		
County ID	**Name**	**Land Use**	**Quantity**	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
PM060030	Sterling Gateway	Industrial Park	1,221.36	TSF	672	122	794	159	635	794
PM060734	Valencia Gateway	Shopping Center	135.01	TSF	76	49	125	218	237	455
		Total Forecasted Trips by the Year 2015			***748***	***171***	***919***	***377***	***872***	***1,249***

10.6.1 Level of Service Analysis

10.6.1.1 Existing plus Growth plus Other Development Conditions

The results of the Existing plus Growth plus Other Development analysis are summarized in Table 10-17. Morning and evening peak hour operating conditions were evaluated using HCM and ICU methodologies. Copies of intersection analysis worksheets are provided in Appendix G.

TABLE 10-17
Summary of Intersection Analysis – Existing plus Growth plus Other Development Conditions

			Existing plus Growth plus Other Development Conditions							
			A.M. Peak				P.M. Peak			
	Intersection	**Control**	**Delay (sec/veh)**	**LOS**	**ICU**	**LOS**	**Delay (sec/veh)**	**LOS**	**ICU**	**LOS**
1	Chiquito Canyon Road at SR-126	Unsignalized[a]	58.7	F	0.407	A	88.9	F	0.442	A
2	Chiquita Canyon Landfill Entrance at SR-126	Unsignalized[a]	27.9	D	0.374	A	55.7	F	0.449	A
3	Wolcott Way at SR-126	Signalized	35.0	D	0.385	A	42.6	D	0.448	A
4	Commerce Center Drive at SR-126	Signalized	36.0	D	0.667	B	97.8	F	0.949	E
5	I-5 Southbound Ramps at SR-126	Signalized	24.0	C	0.824	D	12.6	B	0.553	A
6	I-5 Northbound Ramps at SR-126	Signalized	27.4	C	0.603	A	26.7	C	0.478	A
7	Franklin Parkway at Commerce Center Drive	Signalized	8.3	A	0.435	A	19.5	B	0.507	A
8	Wolcott Way at Franklin Parkway	Unsignalized[b]	Intersection does not exist without project							

[a] HCM results (delay) reported for worst stop controlled approach.
[b] HCM results (delay) reported for overall stop controlled intersection.

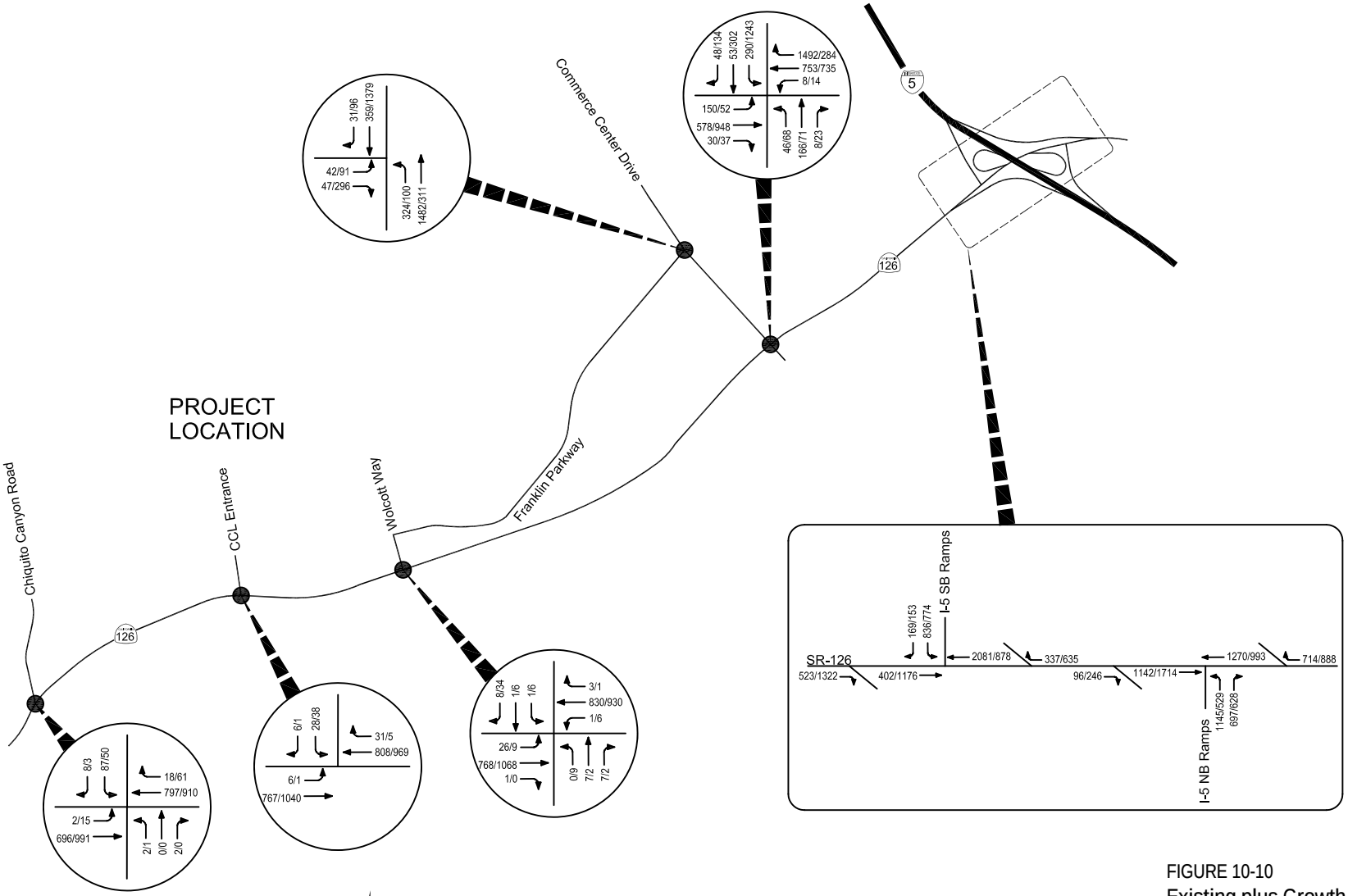


FIGURE 10-10
Existing plus Growth plus Other Development Peak Hour Volumes
Chiquita Canyon Landfill Master Plan Revision

CH2MHILL

Table 10-17 shows that all but one study intersection will operate at LOS D or better using the ICU methodology in the Existing plus Growth plus Other Development conditions. The intersection of Commerce Center Drive and SR-126 is projected to operate at LOS E in the p.m. peak hour using the ICU methodology. The intersection of Commerce Center Drive and SR-126 will be under construction in 2015 as part of the Commerce Center Drive/SR-126 improvement project. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection (interchange) will return operations to LOS D or better in both the morning and evening peak hours.

Using the HCM methodology, the following intersections will operate at LOS E or worse:

- Chiquito Canyon Road at SR-126 (two-way stop controlled, LOS F in the a.m. and p.m.)
- Chiquita Canyon Landfill Entrance at SR-126 (two-way stop controlled, LOS F in the p.m.)
- Commerce Center Drive at SR-126 (signalized, LOS F in the p.m.)

Peak hour volume traffic signal warrants indicate that signals are not warranted at Chiquito Canyon Road/ SR-126 and Chiquita Canyon Landfill Entrance/SR-126 under Existing plus Growth plus Other Development conditions. Copies of the peak hour volume warrant worksheets are provided in Appendix G.

10.6.1.2 Existing plus Growth plus Other Development Conditions plus Project Conditions

Table10-18 shows that all but one of the study intersections will operate at LOS D or better using the ICU methodology in the Existing plus Growth plus Other Development plus Project condition. The intersection of Commerce Center Drive and SR-126 is projected to operate at LOS E in the PM peak hour.

Using the HCM methodology, the following intersections will operate at LOS E or worse:

- Chiquito Canyon Road at SR-126 (two-way stop controlled, LOS F in the a.m. and p.m.)
- Commerce Center Drive at SR-126 (signalized, LOS F in the p.m.)

The Proposed Project will have a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. However, upon completion of the Commerce Center Drive/SR-126 improvement project, operations at the intersection will return to LOS D or better in both the morning and evening peak hours.

The Proposed Project will have a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. However, the intersection of Commerce Center Drive and SR-126 will be under construction in 2015 as part of the Commerce Center Drive/SR-126 improvement project. The Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016. Upon completion, the planned improvements at this intersection will return operations to LOS D or better in both the morning and evening peak hours. Therefore, no mitigation is required of the CCL project since the impact is temporary and because mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project.

Peak hour volume traffic signal warrants indicate that signals are not warranted at Chiquito Canyon Road/ SR-126 under Existing plus Growth plus Other Development plus Project conditions. Copies of the peak hour volume warrant worksheets are provided in Appendix G.

TABLE 10-18

Summary of Intersection Analysis – Existing plus Growth plus Other Development plus Project Conditions

			Existing plus Growth plus Other Development Conditions								Existing plus Growth plus Other Development plus Project Conditions									
			A.M. Peak				P.M. Peak				A.M. Peak					P.M. Peak				
	Intersection	Control	Delay (sec/veh)	LOS	ICU	LOS	Delay (sec/veh)	LOS	ICU	LOS	Delay (sec/veh)	LOS	ICU	LOS	Significant Impact?	Delay (sec/veh)	LOS	ICU	LOS	Significant Impact?
1	Chiquito Canyon Road at SR-126	Unsignalized[a]	58.7	F	0.407	A	88.9	F	0.442	A	60.3	F	0.409	A	No	90.5	F	0.443	A	No
2	Chiquita Canyon Landfill Entrance at SR-126	Unsignalized[a]	27.9	D	0.374	A	55.7	F	0.449	A	Intersection does not exist with project									
3	Wolcott Way at SR-126	Signalized	35.0	D	0.385	A	42.6	D	0.448	A	50.9	D	0.423	A	No	37.1	D	0.481	A	No
4	Commerce Center Drive at SR-126	Signalized	36.0	D	0.667	B	97.8	F	0.949	E	37.7	D	0.689	B	No	105.8	F	0.972	E	**Yes**
5	I-5 Southbound Ramps at SR-126	Signalized	24.0	C	0.824	D	12.6	B	0.553	A	25.4	C	0.838	D	No	12.8	B	0.566	A	No
6	I-5 Northbound Ramps at SR-126	Signalized	27.4	C	0.603	A	26.7	C	0.478	A	27.4	C	0.618	B	No	26.5	C	0.492	A	No
7	Franklin Parkway at Commerce Center Drive	Signalized	8.3	A	0.435	A	19.5	B	0.507	A	8.3	A	0.436	A	No	19.5	B	0.507	A	No
8	Wolcott Way at Franklin Parkway	Unsignalized[b]	Intersection does not exist without project								7.7	A	0.206	A	No	8	A	0.199	A	No

[a] HCM results (delay) reported for worst stop controlled approach.

[b] HCM results (delay) reported for overall stop controlled intersection.

10.6.2 I-5 Freeway Ramp Queuing Analysis

Queue lengths at the northbound and southbound I-5 off-ramps were examined to evaluate whether or not adequate storage is available to accommodate peak-hour traffic with the Proposed Project under the Existing plus Growth plus Other Development Conditions and the Existing plus Growth plus Other Development Conditions with Project. The queue lengths reported in Table 10-19 represent the 95th percentile queue length as calculated in Synchro. The worse peak-hour queue length is reported.

TABLE 10-19
Interstate 5 Off-Ramp Queue Analysis at State Route 126

Intersection	Available Off-Ramp Storage Length (feet)	Existing Conditions Queue Length (feet)	Existing plus Growth plus Other Development Conditions Queue Length (feet)	Existing plus Growth plus Other Development plus Project Conditions Queue Length (feet)
I-5 southbound off-ramp and SR-126	1,600	237	303	311
I-5 northbound off-ramp and SR-126	1,300	507	564	565

Review of the anticipated 95th percentile queue lengths in Table 10-19 shows that the peak-hour queue lengths do not exceed the available off-ramp storage in any of the scenarios analyzed. In addition, the Proposed Project will only cause a slight increase (less than 10 feet) in the queue length in the Existing plus Growth plus Other Development plus Project conditions (based on Synchro analysis).

10.6.3 Summary

The Proposed Project would result in a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines under Existing plus Growth plus Other Development plus Project conditions. However, the Commerce Center Drive/SR-126 improvement project is scheduled to be complete in 2016 and the planned improvements at this intersection will return operations to LOS D or better during both peak hours. Therefore, no mitigation is required of the CCL project since the impact is temporary and because mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project. With implementation of the Commerce Center Drive/SR-126 improvement project, the Proposed Project impact at this intersection would be reduced to less than significant. No other significant adverse impacts to traffic resulting from the Proposed Project are anticipated.

10.7 Mitigation Measures

The Proposed Project would result in a temporary significant impact at the intersection of Commerce Center Drive and SR-126 based on the Los Angeles County CMP guidelines. However, the Commerce Center Drive/ SR-126 improvement project is scheduled to be complete in 2016 and the planned improvements at this intersection will return operations to LOS D or better during both peak hours. Therefore, no mitigation is required of the CCL project since the impact is temporary and because mitigation measures during construction conditions would interfere with the planned staging of the Commerce Center Drive/SR-126 improvement project. No other significant adverse impacts to traffic resulting from the Proposed Project are anticipated.

10.8 Significance After Mitigation

With implementation of the Commerce Center Drive/SR-126 improvement project, the Proposed Project impacts would be reduced to less than significant.

10.9 Cumulative Impacts

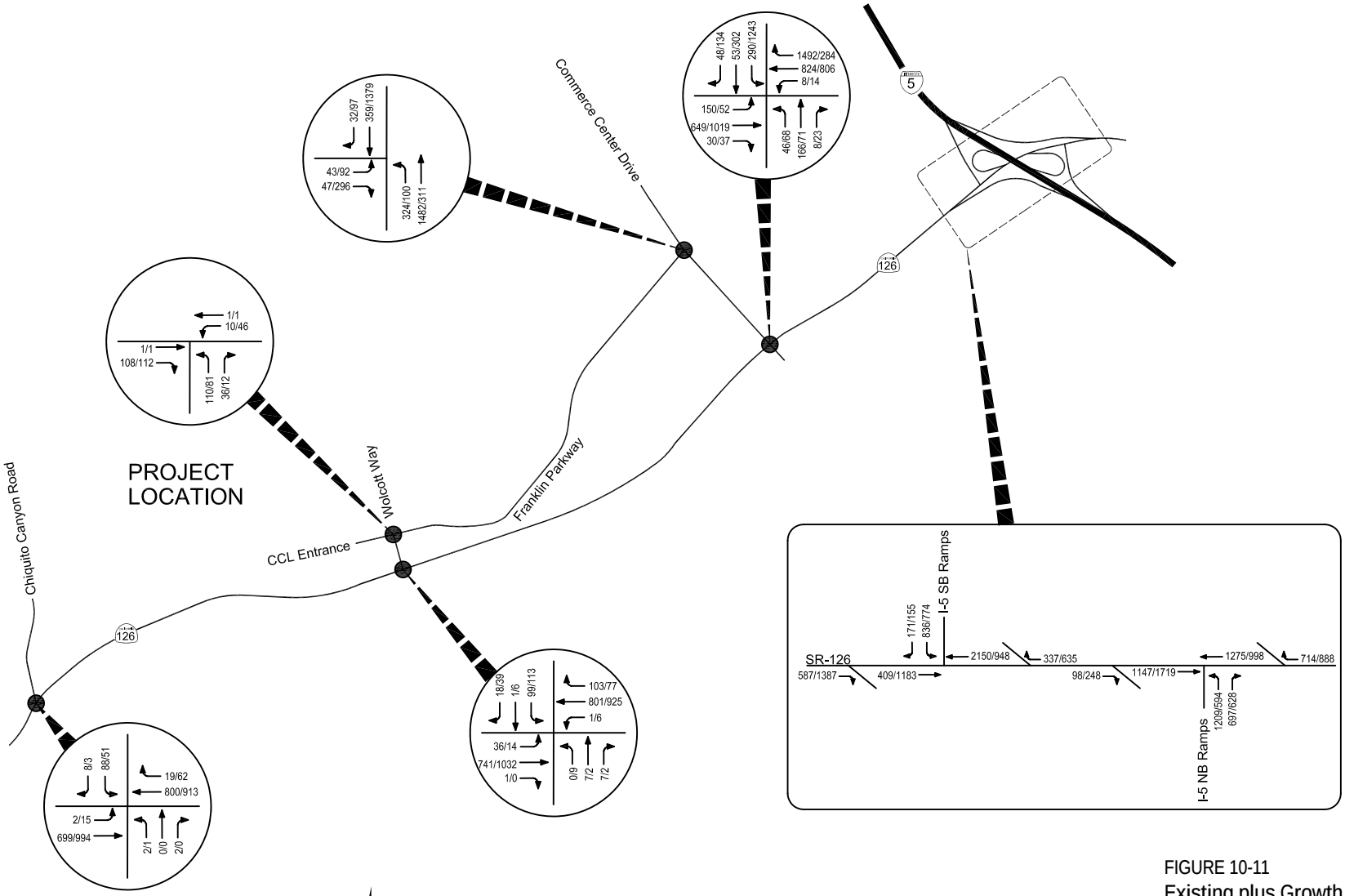
The cumulative impact analysis considers the combined traffic impacts of the Proposed Project (in addition to the ambient growth rate) with a subset of the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis.

For the purposes of this long-term cumulative impact analysis, the subset of the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis, excludes any project that has already been approved but is not yet constructed, or any project that is in the application process and is a reasonably foreseeable development, as those projects are accounted for in Section 10.6, Interim Condition. The projects currently planned or proposed in the cumulative impact area of the Proposed Project were provided by the LADRP. The cumulative project information is based on the best information available at the time this DEIR was prepared.

Most notable on the list of projects are the Newhall Ranch developments, located immediately south, east, and west of the Proposed Project and the Caltrans SR-126/ Commerce Center Drive Interchange Improvements Project (SR-126 Improvements Project), located approximately 1 mile east of the Project.

Construction and occupancy of all four of the Newhall Ranch developments will occur roughly between 2014 and 2033 (NLF, pers. comm., 2014). The SR-126 Improvements Project began construction in late 2012 and is anticipated to be complete in late 2015/early 2016. The SR-126 Improvements Project is intended to improve local access and traffic circulation; incorporate planned infrastructure improvements consistent with local and regional planning efforts; enhance driver safety; and accommodate planned growth within the study area. Specifically, the SR-126 Improvements Project would prevent deficient roadway and intersection operations that would result from the buildout of planned development in the area (Caltrans, 2005).

Operation of the Proposed Project will continue for an additional 20 to 40 years depending on when the landfill reaches final grade, thus overlapping with construction and operation of the surrounding cumulative projects. Based on the SR-126 Improvements Project, traffic conditions at the SR 126/Commerce Center Drive intersection will be improved over existing conditions and the project is proposed to accommodate future traffic growth in the area. Furthermore, the Newhall Ranch developments would require detailed CEQA analysis and adequate mitigation measures; therefore it is reasonable to assume that they would also include mitigation measures (including roadway and intersection improvements) to reduce any cumulative traffic impacts on the surrounding road network to a less-than-significant level. Therefore, the long-term cumulative impact that would result from the combination of the Proposed Project’s incremental impact and the effects of other projects is not considered to be significant.



LEGEND

XX / YY AM / PM Peak-Hour Volume

FIGURE 10-11
Existing plus Growth plus Other Development plus Project Peak Hour Volumes
Chiquita Canyon Landfill Master Plan Revision

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SECTION 11.0

Air Quality

11.1 Introduction

This chapter provides an evaluation of the potential impacts to air resources associated with the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project), including a brief description of the existing conditions, with an overview of the regulatory setting, climate and meteorology, existing air quality, and operational setting of the Proposed Project. The Proposed Project is expected to generate construction emissions, which would have less-than-significant impacts with implementation of Project Design Measures. The Proposed Project is also expected to generate operation emissions, carbon monoxide (CO) from increased vehicle trips, and odors from operation, which would have less-than-significant impacts with implementation of Project Design Measures based on current land use in the area. The impact assessment methodology, potential impacts of the Proposed Project, and proposed mitigation measures are also presented in this report.

11.2 Methodology

Several methodologies were developed and used to estimate emissions and perform dispersion modeling for the Proposed Project. Emissions were estimated for the incremental increase in activity associated with the Proposed Project, and were not calculated for activity associated with the existing landfill. Methodologies were developed and used for the following:

- Construction Emission Calculations, including construction exhaust and construction fugitive dust.
- Operation Emission Calculations; including operation exhaust, stationary source exhaust, operation fugitive dust, and fugitive landfill gas (LFG).
- Dispersion Modeling.
- Health Risk Assessment (HRA).
- CO Hotspot Analysis.
- Odor Analysis.

Complete methodology details are included in Appendix H.

As part of the methodology, best management practices (BMP) to reduce emissions during construction and operation were developed. These BMPs are listed below and are also incorporated into the Proposed Project as Project Design Measures.

Construction Emissions Reductions BMPs:

- The construction equipment would be equipped with engines meeting California Air Resources Board (CARB) requirements for a large fleet at the time of construction (CARB, 2013a). This would include a combination of Tier 3 and Tier 4 compliant equipment.
- The construction equipment would be equipped with diesel particulate filters (DPF) and lean nitrogen oxides (NOx) catalyst, which would result in an 85 percent reduction for particulate matter and a 40 percent reduction for NOx (United States Environmental Protection Agency [EPA], 2013f).
- Unnecessary truck and equipment idling would be limited to less than 2 minutes, to the extent feasible.
- Use of all construction equipment would be suspended during second stage smog alerts (SCAQMD, 1993).

- Fugitive dust from vehicle travel on paved roads would be controlled using a 25-foot-long gravel trackout apron, which would result in a 46 percent reduction in particulate matter emissions (South Coast Air Quality Management District [SCAQMD], 2013a and 2013b). Paved roads would be cleaned three times daily using a SCAQMD-approved street sweeper, which would result in an additional 45 percent emissions reduction for particulate matter (Western Regional Air Partnership [WRAP], 2006a).
- Fugitive dust from vehicle travel on unpaved roads would be controlled through watering two times daily, the use of dust palliatives, paving as much as possible, and limiting the maximum vehicle speed to 15 miles per hour, which would result in a combined effective control efficiency of 90 percent (SCAQMD, 2013c; WRAP, 2006b).
- Fugitive dust from soil disturbance would be suppressed with hourly watering and dust suppressant application, which would reduce particulate matter emissions by 90 percent (WRAP, 2006c).

Operation Emissions Reductions BMPs:

- The off-road diesel equipment would be equipped with engines meeting Tier 4 emission standards.
- The off-road diesel equipment would be equipped with DPF, which would result in an 85 percent reduction for particulate matter and a 40 percent reduction for NOx (EPA, 2013f).
- Unnecessary truck and equipment idling would be limited to less than 2 minutes, to the extent feasible.
- Use of all off-road diesel equipment would be suspended during second stage smog alerts (SCAQMD, 1993).
- Fugitive dust BMPs for vehicle travel on paved roads, vehicle travel on unpaved roads, and soil disturbance would be the same as described above for construction.

11.3 Regional Setting

11.3.1 Geography and Topography

CCL, located in the northwestern portion of unincorporated Los Angeles County, is approximately 3 miles west of the intersection of Interstate 5 (I-5) and State Route 126 (SR-126). The site is located in Section 15, Township 4 North, Range 17 West, San Bernardino Baseline and Meridian. The site latitude and longitude are 34°25’N and -118°39’W, respectively. The landfill is located within a series of canyons that make up the current and future cells containing disposed waste. These canyons are oriented in a north-northeast to south-southwest manner and broaden to form the Santa Clarita River floodplain along the south. CCL is located in Los Angeles County, within the planning area of the City of Santa Clarita, but outside its city limits and sphere of influence. The landfill site is also located in the Santa Clarita Valley Area Plan of the Los Angeles County General Plan and in the Castaic Area Community Standards District.

Access to the site is from SR-126 (Henry Mayo Drive), a four-lane paved highway running east-west along the southern boundary of CCL. Access to CCL at SR-126 includes left-turn and right-turn deceleration lanes for traffic entering the site. A detailed discussion of the traffic conditions and the circulation network that affect air quality conditions is presented in Chapter 10.0, Traffic and Transportation.

Figure 11-1 shows the various land use/land classifications surrounding the landfill. As shown in the figure, low intensity to high intensity developed land is located immediately northwest, northeast, and east of the landfill, indicating residential and commercial use areas.

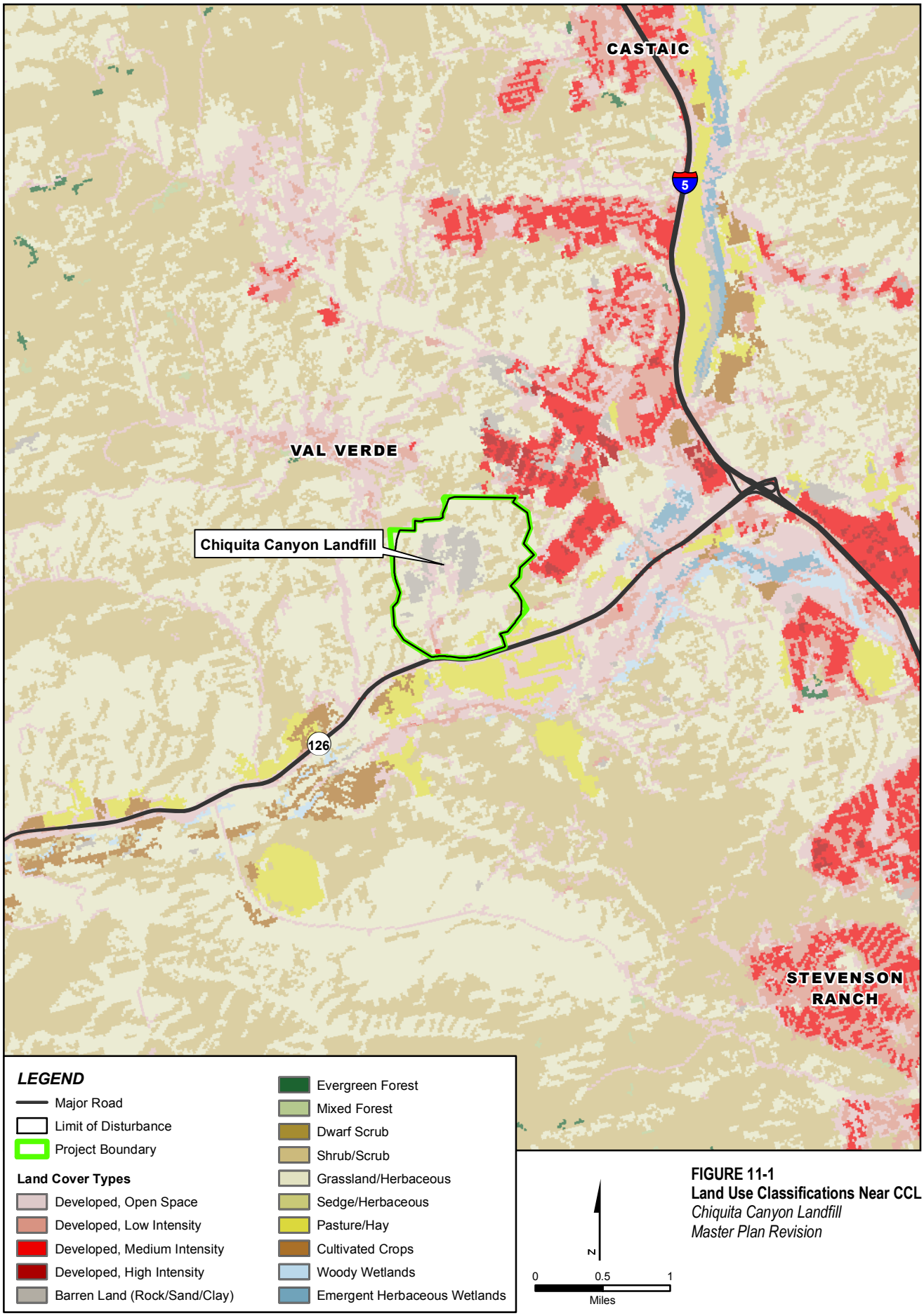

FIGURE 11-1
Land Use Classifications Near CCL
Chiquita Canyon Landfill
Master Plan Revision

Source: U.S. Geological Survey, 2006

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11.3.2 Climate and Meteorology

The climate of the Santa Clarita Valley region is characterized as Mediterranean. Winters are generally cool and moderately wet, while summers tend to be hot and dry, with occasional subtropical moisture entering the area. Extreme temperatures are moderated by the region's proximity to the Pacific Ocean causing small daily and seasonal fluctuations. Poor pollution dispersion conditions result from the persistent temperature inversions found on most days.

Climatological data for CCL were gathered from nearby weather stations located about 6 to 18 miles from the site. The temperature ranges from a minimum of 39 degrees Fahrenheit (°F) in December and January to a maximum of 95°F in July, with an annual mean temperature of 63.5°F. Rainfall averages about 14 inches annually, with approximately 90 percent of the precipitation occurring from November through April. There are only about 40 days out of the year when precipitation is equal to or greater than 0.01 inch (City of Santa Clarita, 1997).

Winds are an important consideration for landfills because they affect the dispersal of contaminants associated with trash disposal. Winds govern the rate and direction of odor diffusion. Winds may blow litter about during high wind conditions, as well as fugitive dust stirred by soil disturbance.

11.3.3 Existing Air Quality

11.3.3.1 Attainment Status

SCAQMD operates a network of ambient air quality monitoring stations located throughout the Basin to characterize the air quality environment. Pollutants monitored include ozone, CO, nitrogen dioxide (NO_2), particulate matter with aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2), and lead. Depending on whether or not the air quality standards are met or exceeded, an area is classified as being in "attainment" or "nonattainment" for each pollutant. The Basin currently exceeds state and federal ambient air quality standards for several pollutants and is required to implement strategies that would reduce the pollutant levels to achieve the recognized standards. The area where the project is located is designated as nonattainment for the state ozone, PM_{10}, $PM_{2.5}$, NO_2, and lead standards. The area is designated as nonattainment for the federal 8-hour ozone, $PM_{2.5}$, and lead standards. Table 11-1 shows the current attainment status for regulated air pollutants in the air basin.

TABLE 11-1
Attainment Designations of the Project Area

Pollutant	State Designation	Federal Designation
Ozone	1-hour: Nonattainment (Extreme) 8-hour: Nonattainment	1-hour: N/A 8-hour: Nonattainment (Extreme)
CO	1-hour: Attainment 8-hour: Attainment	1-hour: Attainment 8-hour: Attainment
NO_2	1-hour: Nonattainment Annual: Nonattainment	1-hour: Attainment Annual: Attainment
SO_2	1-hour: Attainment 24-hour: Attainment	1-hour: Attainment 24-hour: N/A
PM_{10}	24-hour: Nonattainment Annual: Nonattainment	24-hour: Maintenance Annual: N/A
$PM_{2.5}$	24-hour: N/A Annual: Nonattainment	24-hour: Nonattainment Annual: Nonattainment
Lead	Nonattainment	Nonattainment
H_2S, Sulfates	Unclassified, Attainment	No federal standard, No federal standard

Notes:

N/A = not applicable

Sources: CARB, 2013c; EPA, 2013b

11.3.3.2 Air Monitoring Data

Ambient air quality data were taken from data published by CARB (on the Aerometric Data Analysis and Management [ADAM] website) and EPA (on the AirData website). Ambient concentrations of ozone, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$ are recorded at monitoring stations located throughout the South Coast Air Basin, in which CCL is located. Three of the nearest monitoring stations were used to gather information regarding the air quality around Chiquita Canyon: Burbank – W Palm Avenue, Reseda, and Santa Clarita stations. The Santa Clarita station is the closest to the project site, approximately 7 miles from the landfill entrance. SO_2 and $PM_{2.5}$ monitoring data are not available at the Santa Clarita station, therefore, the Burbank and Reseda stations were used for SO_2 and $PM_{2.5}$ data, respectively. A summary of the maximum monitored criteria pollutant concentrations is presented in Table 11-2.

TABLE 11-2
Summary of Monitoring Data – Maximum Concentrations

Pollutant	Averaging Time	2009	2010	2011
CO (ppm)	1-hour[a]	1.8	1.5	1.2
	Days of State Exceedances	0	0	0
	Days of Federal Exceedances	0	0	0
	8-hour[b]	1.35	1.15	0.79
	Days of State Exceedances	0	0	0
	Days of Federal Exceedances	0	0	0
O_3 (ppm)	1-hour[b]	0.140	0.126	0.144
	Days of State Exceedances	57	18	31
	8-hour[b]	0.122	0.105	0.122
	Days of State Exceedances	77	41	52
	Days of Federal Exceedances	64	23	31
NO_2 (ppm)	Annual Average[b]	0.015	0.014	0.013
	Federal Exceedances	N	N	N
	1-hour[b]	0.060	0.059	0.060
	Days of State Exceedances	0	0	0
SO_2 (ppm)	Annual Average	0.001	0.001	N/A
	24-hour[b]	0.003	0.004	0.002
	Days of State Exceedances	0	0	0
	3-hour[a]	0.008	0.010	0.0075
	Days of Federal Exceedances	0	0	0
	1-hour[a]	0.013	0.015	0.009
	Days of State Exceedances	0	0	0
PM_{10} ($\mu g/m^3$)	Annual Arithmetic Mean[b]	23.9	21.0	20.9
	State Exceedances	Y	N	N
	24-hour[b]	56	40	45
	Days of State Exceedances	1	0	0
	Days of Federal Exceedances	0	0	0

TABLE 11-2
Summary of Monitoring Data – Maximum Concentrations

Pollutant	Averaging Time	2009	2010	2011
$PM_{2.5}$ (µg/m³)	Annual Arithmetic Mean[a]	11.38	10.17	10.2
	State Exceedances	N	N	N
	Federal Exceedances	N	N	N
	24-hour[a]	39.9	40.7	39.8
	Federal Exceedances	N	N	N

[a] Source: EPA, 2013c, http://www.epa.gov/airquality/airdata/ad_rep_mon.html, as of April 2013.

[b] Source: CARB, 2013d, http://www.arb.ca.gov/adam/topfour/topfour1.php, as of April 2013.

Notes:

Monitoring data were taken from the Santa Clarita Monitoring Station monitor, with the exception of SO_2 data, which were taken from the Burbank station, and $PM_{2.5}$ data, which were taken from the Reseda station.

Hydrogen sulfide, vinyl chloride, and visibility-reducing particles are not monitored.

µg/m³ = micrograms per cubic meter

ppm = parts per million (by volume)

Ozone

Ozone is an end product of complex reactions between volatile organic compounds (VOC) and NOx in the presence of intense ultraviolet radiation. VOC and NOx emissions from millions of vehicles and stationary sources, in combination with daytime wind flow patterns, mountain barriers, a persistent temperature inversion, and intense sunlight result in high ozone concentrations.

Short-term and long-term exposure to ozone is a public health concern. Exposure to ozone produces alterations in respiration resulting in shallow, rapid breathing and a decrease in pulmonary performance. Not only does ozone affect breathing patterns, exposure can also result in increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. In addition, ozone can cause substantial damage to leaf tissues of crops and natural vegetation, and damage to many building materials by acting as a chemical-oxidizing agent. For the purpose of state and federal air quality planning, the South Coast Air Basin is designated as a nonattainment area for ozone.

Table 11-2 shows the maximum ozone levels reported at the Santa Clarita monitoring station during the period beginning in 2009 and ending in 2011, as well as the number of days in which the state and federal standards were exceeded. Both the state and federal ozone standards are based on an 8-hour averaging period with the state limit being 0.07 ppm and the federal limit being 0.075 ppm. State standards also include a 1-hour limit of 0.09 ppm. The data show that the state and federal ozone air quality standards were exceeded in all 3 years. Los Angeles County is considered a nonattainment area for ozone on both the state and federal levels.

Nitrogen Dioxide

Atmospheric NO_2 is formed primarily from reactions between nitric oxide (NO) and oxygen or ozone. NO is formed during high temperature combustion processes (for example, combustion of fuels) when the nitrogen and oxygen in the combustion air combine. Although NO is much less harmful than NO_2, it can be converted to NO_2 in the atmosphere within a matter of hours, or even minutes, under certain conditions.

NO_2 acts as an acute respiratory irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and pulmonary fibrosis. Some increase in bronchitis in young children (2 to 3 years of age) has been observed at concentrations below 0.3 ppm.

Table 11-2 shows the NO_2 levels reported at the Santa Clarita monitoring station during the period beginning in 2009 and ending in 2011. No exceedances of the state or federal NO_2 standards were recorded during this period.

Carbon Monoxide

CO is a product of incomplete combustion, principally from automobiles and other mobile sources of pollution. In many areas of California, CO emissions from wood-burning stoves and fireplaces can also be measurable contributors to high ambient levels of CO. Industrial sources typically contribute less than 10 percent of ambient CO levels. Peak CO levels typically occur during winter months, due to a combination of higher emission rates and stagnant weather conditions.

There are no direct toxic effects associated with inhaled CO. However, CO levels are a public health concern because this pollutant competes with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin that results in a reduction in the rate at which oxygen is transported in the blood stream. Both the cardiovascular system and the central nervous system can be affected when 25 to 40 percent of the hemoglobin in the blood stream is bound to CO rather than to oxygen.

Table 11-2 shows the CO levels reported at the Santa Clarita monitoring station during the period beginning in 2009 and ending in 2011, as well as the number of days in which the state and federal standards were exceeded. Both the state and federal standards include a 1-hour (20 ppm and 35 ppm, respectively) and an 8-hour (9 ppm for both) averaging time. No exceedances occurred between 2009 and 2011 at the Santa Clarita station.

Sulfur Dioxide

SO_2 is produced when any sulfur-containing fuel is burned. It is also emitted by chemical plants that treat or refine sulfur or sulfur-containing chemicals. Natural gas contains negligible sulfur, while fuel oils contain much larger amounts. Because of the complexity of the chemical reactions that convert SO_2 to other compounds (such as sulfates), peak concentrations of SO_2 occur at different times of the year in different parts of California, depending on local fuel characteristics, weather, and topography.

Gaseous SO_2 can cause breathing difficulty for people with asthma who are active outdoors, while long-term exposures can cause respiratory illness and aggravate existing heart disease. SO_2 also reacts with other chemicals in the air to form sulfate particles. These particles can gather in the lungs and are associated with increased respiratory symptoms and disease, difficulty in breathing, and premature death. In addition to these physical effects, SO_2 is a contributor to acid rain and accelerates the decay of building materials and paints, including irreplaceable monuments, statues, and sculptures.

Table 11-2 shows the SO_2 levels reported at the Santa Clarita monitoring station during the period beginning in 2009 and ending in 2011. No exceedances occurred between 2009 and 2011 at the Santa Clarita station.

Coarse Particulates (PM_{10})

Particulates in the air are caused by a combination of wind-blown fugitive dust; particles emitted from combustion sources (usually carbon particles); and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxide (SOx), and NOx. In 1984, CARB adopted standards for PM_{10} and phased out the total suspended particulate (TSP) standards that had previously been in effect. PM_{10} standards were substituted for TSP standards because PM_{10} corresponds to the size range of inhalable particulates related to human health. In 1987, EPA also replaced national TSP standards with PM_{10} standards. PM_{10} are usually found near roadways and dusty industries.

PM_{10} can have damaging effects on health by getting deep into lungs and interfering with the body's mechanism for clearing the respiratory tract; some particles may also get into the bloodstream. Exposure to particulate is linked to a variety of problems including aggravated asthma, increased respiratory symptoms, decreased lung function, chronic bronchitis, irregular heartbeat, nonfatal heart attacks, and premature death in people with heart or lung disease. PM_{10} can also be carried over long distances by wind and settle on ground

or water, increasing the acidity of lakes and rivers, changing nutrient balance in coastal waters and river basins, depleting soil nutrients, damaging sensitive forests and farm crops, and impacting ecosystem diversity.

Table 11-2 shows the PM_{10} levels reported at the Santa Clarita monitoring station during the period beginning in 2009 and ending in 2011, as well as the number of days in which the state and federal standards were exceeded. Annual and 24-hour state standards were exceeded in 2009. The federal 24-hour standard was not exceeded between 2009 and 2011.

Fine Particulates ($PM_{2.5}$)

Fine particulates in the air are caused by a combination of particles emitted from combustion sources (usually carbon particles), and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, SOx, and NOx. In 1997, EPA established 24-hour and annual arithmetic mean standards for $PM_{2.5}$. EPA completed its designation of $PM_{2.5}$ attainment and nonattainment areas in 2004. $PM_{2.5}$ requirements are currently in full effect.

$PM_{2.5}$ can have damaging effects on health by getting deep into lungs and interfering with the body's mechanism for clearing the respiratory tract; some particles may also get into the bloodstream. Exposure to particulate is linked to a variety of problems including aggravated asthma, increased respiratory symptoms, decreased lung function, chronic bronchitis, irregular heartbeat, nonfatal heart attacks, and premature death in people with heart or lung disease. $PM_{2.5}$ is also a major cause of reduced visibility.

Table 11-2 shows the $PM_{2.5}$ levels reported at the Reseda monitoring station during the period beginning in 2009 and ending in 2011, as well as the number of exceedances of the state and federal standards. The Santa Clarita monitoring station does not monitor for $PM_{2.5}$ levels; therefore, the $PM_{2.5}$ data were from the Reseda station. The $PM_{2.5}$ state and federal standards were not exceeded at this station between 2009 and 2011.

11.4 Regulatory Setting

Air quality management in California is governed by the federal and California Clean Air Acts (CAA) and the California Health and Safety Code. Several levels of government have adopted specific regulations that limit emissions from stationary combustion sources, some of which are applicable to this project. The agencies having authority for this project are shown in Table 11-3. The applicable federal, state, and local laws, ordinances, regulations and standards, and compliance with these requirements are discussed in more detail in the following sections.

TABLE 11-3
Air Quality Agencies

Agency	Authority	Address
EPA Region 9	Regulatory oversight	EPA Region 9 75 Hawthorne Street San Francisco, CA 94105 (415) 744-1259
CARB	Regulatory oversight	California Air Resources Board 2020 L Street Sacramento, CA 95814 (916) 322-6026
SCAQMD	Permit issuance, enforcement	South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765 (909) 396-2664

11.4.1 Federal Regulations and Standards

11.4.1.1 United States Environmental Protection Agency

EPA is responsible for implementing and enforcing, on a national level, the requirements of many of the country's environmental and hazardous waste laws. California is under the jurisdiction of EPA Region 9, which has its offices in San Francisco. Region 9 is responsible for the local administration of EPA programs for California, Arizona, Nevada, Hawaii, and certain Pacific trust territories. EPA's activities relative to the California air pollution control program focus principally on reviewing California's submittals for the State Implementation Plan (SIP). The SIP is required by the federal CAA to demonstrate how all areas of the state will meet the National Ambient Air Quality Standards (NAAQS) within the federally-specified deadlines (42 *United States Code* §7409, 7411).

11.4.1.2 National Ambient Air Quality Standards

In association with the CAA, EPA has established NAAQS for ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and airborne lead. The CAA established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment and damage to animals, crops, vegetation, and buildings.

Areas with air pollution levels above these standards can be considered "non-attainment areas" subject to planning and pollution control requirements that are more stringent than standard requirements under the federal New Source Review (NSR) program. In areas that already meet the NAAQS (attainment areas), the federally-regulated Prevention of Significant Deterioration (PSD) program is designed to ensure that air quality is not allowed to significantly deteriorate while still allowing a margin for future industrial growth.

NAAQS consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is to be measured. Allowable concentrations are based on the results of studies of the effects of the pollutants on human health, crops and vegetation, and, in some cases, damage to paint and other materials. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (1 hour, for instance), or to a relatively lower average concentration over a longer period (8 hours, 24 hours, or 1 month). For some pollutants, there is more than one air quality standard, reflecting both short-term and long-term effects. Table 11-4 presents the NAAQS for selected pollutants.

TABLE 11-4
Ambient Air Quality Standards

			NAAQS[b]	
Pollutant	**Averaging Time**	**CAAQS[a]**	**Primary[c]**	**Secondary[d]**
Ozone	8 hours	0.070 ppm	0.075 ppm	0.075 ppm
	1 hour	0.09 ppm	—	—
PM_{10}	Annual Arithmetic Mean	20 µg/m^3	—	—
	24 hours	50 µg/m^3	150 µg/m^3	150 µg/m^3
$PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
	24 hours	—	35 µg/m^3	35 µg/m^3
CO	8 hours	9.0 ppm	9 ppm	—
	1 hour	20 ppm	35 ppm	—
NO_2	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	0.100 ppm[e]	—
SO_2	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
	24 hours	0.04 ppm	0.14 ppm (for certain areas)	—
	3 hours	—	—	0.5 ppm
	1 hour	0.25 ppm	0.075 ppm[f]	—

TABLE 11-4
Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]	
			Primary[c]	Secondary[d]
Lead[g]	Calendar Quarter	—	1.5 µg/m^3	1.5 µg/m^3
	Rolling 3-month Average	—	0.15 µg/m^3	0.15 µg/m^3
	30-day Average	1.5 µg/m^3	—	—
Visibility-reducing Particles[h]	8 hours	—	—	—
Sulfates	24 hours	25 µg/m^3	—	—
Hydrogen Sulfide	1 hour	0.03 ppm	—	—
Vinyl Chloride[g]	24 hours	0.01 ppm	—	—

[a] California standards for ozone, CO (except 8-hour Lake Tahoe), SO_2 (1-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards other than ozone, particulate matter, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[d] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[e] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 0.100 ppm.

[f] Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 parts per billion (ppb).

[g] CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. CARB made this determination following the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[h] In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Notes:

CAAQS = California Ambient Air Quality Standards

Sources: CARB, 2013b and EPA, 2013a

The federal CAA, as most recently amended in 1990, provides EPA with the legal authority to regulate air pollution from stationary sources such as CCL. EPA has promulgated the following stationary source regulatory programs to implement the requirements of the 1990 CAA that may be applicable to the proposed landfill operation. Depending on the operation and emissions of the project, one or more of the programs may be applicable:

- Standards of Performance for New Stationary Sources (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAPS)
- PSD
- NSR
- Title V: Operating Permits

11.4.1.3 Conformity

Under the 1990 CAA amendments, EPA has issued two types of SIP conformity guidelines—transportation conformity rules that apply to transportation plans and projects, and general conformity rules that apply to

all other federal actions. Under transportation conformity, the United States Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that do not conform to the CAA requirements for a project located in a nonattainment or maintenance area. Under general conformity, EPA requires all federal agencies to ensure that all federal actions must conform to an approved or promulgated state or federal implementation plan if the actions result in criteria pollutant emissions for which the area has been designated as a nonattainment or maintenance area. Though the area is not in attainment of the NAAQS for ozone and $PM_{2.5}$, no federal action is needed for the Proposed Project. Therefore, a general conformity analysis for the Proposed Project is not required.

11.4.2 State Regulations and Standards

CARB oversees California air quality policies. CAAQS were first established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent than the NAAQS and include four additional pollutants: sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates. Relevant CAAQS are listed in Table 11-4.

The California CAA, which was approved in 1988, requires each local air district in the state to prepare an Air Quality Management Plan (AQMP, part of the SIP) that complies with the CAAQS. CARB has ultimate responsibility for the SIP for nonattainment pollutants but relies on each local air district to adopt mandatory statewide programs and provide additional tailored strategies for sources under their local jurisdiction. The SIPs required by federal law are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to EPA for approval and publication in the *Federal Register*.

11.4.3 Local Regulations and Standards

11.4.3.1 SCAQMD Air Quality Management Plan

SCAQMD is the local agency responsible for ensuring that federal and state ambient air quality standards are attained in the project area. Periodically, SCAQMD prepares an AQMP to be submitted for inclusion in the SIP. The most recent EPA-approved South Coast SIPs are the *Final 1997 Air Quality Management Plan* (SCAQMD, 1997) and the *Final 1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin* (SCAQMD, 1999).

The most recent AQMP, the Final 2012 AQMP, was adopted by the SCAQMD Board on December 7, 2012 (SCAQMD, 2013d). The Final 2012 AQMP was submitted to EPA for approval on December 20, 2012.

11.4.3.2 SCAQMD Regulations

A project is required to be in compliance with SCAQMD regulations and rules. The Proposed Project construction and operation will be subject to Rule 403 (Fugitive Dust), which requires specific actions or measures to prevent, reduce, or mitigate particulate matter emissions generated from man-made fugitive dust sources. Required actions for each fugitive dust source within the active operation are listed in Rule 403 Table 1, Best Available Control Measures. Additional requirements for large operations with 50 acres or more of disturbed surface area, or with a daily earth-moving or throughput volume of 5,000 cubic yards are listed in Rule 403 Tables 2 and 3. However, the requirements for larger operations do not apply to this project.

Operation of the equipment installed for the Proposed Project will be subject to SCAQMD Rules 201 and 206 permitting requirements and other operational and emission limits in the rules, unless such requirements are exempt by the regulations. Current landfill operations are subject to Rule 206, and a Title V operating permit has been issued for the landfill (facility ID 119219). This permit limits emissions from the existing flares and requires odor mitigation.

SCAQMD regulations that may apply to operation of the Proposed Project include:

Prohibitory Rules (Regulation IV)

SCAQMD Regulation IV contains a number of prohibitory rules that generally apply to facility operations including:

- Rule 401 Visible Emissions
- Rule 402 Nuisance
- Rule 403 Fugitive Dust
- Rule 404 Particulate Matter - Concentration
- Rule 405 Solid Particulate Matter - Weight
- Rule 407 Liquid and Gaseous Air Contaminants
- Rule 408 Circumvention
- Rule 409 Combustion Contaminants
- Rule 430 Breakdown Provisions
- Rule 431.1 Sulfur Content of Gaseous Fuels

New Source Review Rules (Regulation XIII)

Regulation XIII combines the federal and state NSR requirements into a single rule. Regulation XIII establishes pre-construction requirements for new or modified facilities to ensure that operation of such facilities does not interfere with progress towards the attainment of ambient air quality standards without unnecessary restricting economic growth.

New Source Review Rules for Air Toxics (Regulation XIV)

Regulation XIV establishes allowable public health risks for permit units by specifying limits for maximum individual cancer risk (MICR), cancer burden, and non-cancer acute hazard index (HIA) and chronic hazard index (HIC) from new or modified units which emit TACs.

Source Specific Rules: Landfill Gas Emission Control (Rule 1150.1)

SCAQMD Rule 1150.1 is intended to limit municipal solid waste landfill emissions to prevent public nuisance and possible detriment to public health caused by exposure to such emissions. The primary elements of this rule include the requirement for a LFG collection and control system and a monitoring system to verify the proper operation of the gas collection system.

11.5 Local Setting

11.5.1 Existing Operating Emissions

CCL actively receives waste at a roughly 200-foot by 300-foot working face within the site. Daily operations at the existing landfill consist of typical waste disposal activities and facilities that contribute criteria pollutants to the ambient air in the air basin. The operation of landfills and the associated emission rates are unique in comparison to land development projects because landfill operations require the regular use of heavy-duty construction equipment and collection vehicles, long-term exposure of non-vegetated soil layers, constant movement of soil and refuse, and proper onsite disposal of LFG. An LFG collection system has been installed in both closed and active landfill areas, and a 9.2 megawatt (MW) landfill gas-to-energy (LFGTE) plant and flare stations have been added to combust the collected gases. Air emissions from landfill operations are associated with fugitive LFG emissions, operation of the flare stations and LFGTE plant, construction vehicles and waste transfer trucks at refuse fill areas, construction of additional modules for waste receiving, and closure of modules that have reached capacity.

11.5.1.1 Landfill Gas Surface Emissions

As part of landfill operation, gas wells and pipelines are installed to capture the gas generated by the decaying solid waste. Initially, the LFG is mostly carbon dioxide (CO_2). As the buried waste ages, the available oxygen

decreases and anaerobic conditions are created producing CH_4 and reduced sulfur compounds. CH_4 is a powerful greenhouse gas (GHG) and reduced sulfur compounds have strong odors. Potential GHG impacts from the Proposed Project are discussed in Chapter 12.0, Greenhouse Gas Emissions and Climate Change.

The collected gas is monitored to be sure that the collection system is collecting LFG without drawing in ambient air. The collected gas is combusted in either the LFGTE plant or a flare, converting the CH_4 to CO_2 and reduced sulfur compounds into SO_2. Two LFG flares, each with a capacity of 4,000 cubic feet per minute, are currently in operation.

The gas wells and pipelines collect an average of 85 percent of the LFG produced, and about 15 percent of the gas generated in the landfill escapes as fugitive emissions. Several actions are taken to minimize these emissions:

- Gauge pressure is negative at the gas extraction well
- Nitrogen and oxygen concentrations are monitored to minimize excess air infiltration
- LFG temperatures at the gas extraction wells are monitored to limit the potential for subsurface fires
- CH_4 concentrations across the landfill surface are monitored to prevent seeping of CH_4 gas from the landfill surface.

In addition to the emission sources described above, CCL has underground diesel storage tanks, a material recovery facility, and a truck storage and maintenance facility. Additionally, CCL intends to resume a composting operation, previously active from 1997 to 2009, in the future.

11.5.1.2 Mobile Source Emissions

Fugitive Dust Emissions

Fugitive dust emissions are generated during operation of the landfill by the following activities:

- Heavy equipment operations (scrapers, bulldozers, compactors, graders, and water trucks) that apply daily and intermediate cover to refuse, compact refuse and soil, maintain haul road conditions, and work the face of the landfill
- Excavation and grading activities
- Soil stockpiles
- Landfill liner installation and final cover construction
- Truck travel on paved and unpaved roads

Mobile Tailpipe Exhaust Emissions

Mobile tailpipe exhaust emissions are generated during operation of the landfill by the following activities:

- Onsite service trucks and heavy equipment
- Collection trucks, transfer trucks, and passenger vehicles that deliver solid waste and yard waste
- Passenger vehicles associated with landfill employees

11.6 Potential Impacts

11.6.1 Standards of Significance

11.6.1.1 Criteria under CEQA Context

Pursuant to the *California Environmental Quality Act (CEQA) Guidelines*, air quality impacts related to the Proposed Project would be significant if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); or
- Create objectionable odors affecting a substantial number of people.

11.6.2 Thresholds of Significance

11.6.2.1 SCAQMD Thresholds

In addition to the above CEQA significance criteria, SCAQMD has developed emission, air dispersion modeling, and health risk thresholds for CEQA analysis. SCAQMD air quality significance thresholds are shown in Table 11-5. Air quality impacts resulting from construction and operation are deemed significant if daily emission estimates, air modeling results, or HRA results are above the following significance thresholds:

TABLE 11-5
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction [b]**	**Operation [c]**
NO_X	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TAC), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO_2e for industrial facilities	
Ambient Air Quality for Criteria Pollutants [b]		
NO_2		
1-hour average	0.18 ppm (state)	
Annual average	0.03 ppm (state) and 0.0534 ppm (federal)	
PM_{10}		
24-hour average	10.4 µg/m^3 (construction)[c] and 2.5 µg/m^3 (operation)	
Annual average	1.0 µg/m^3	
$PM_{2.5}$		
24-hour average	10.4 µg/m^3 (construction)[c] and 2.5 µg/m^3 (operation)	
SO_2		
1-hour average	0.25 ppm (state) and 0.075 ppm (federal)	
24-hour average	0.04 ppm (state)	
Sulfate		
24-hour average	25 µg/m^3	
CO	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
1-hour average	20 ppm (state) and 35 ppm (federal)	
8-hour average	9.0 ppm (state/federal)	

TABLE 11-5
SCAQMD Air Quality Significance Thresholds

Source: SCAQMD, 2013e
[a] Source: SCAQMD *CEQA Air Quality Handbook* (SCAQMD, 1993)
[b] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[c] Ambient air quality threshold based on SCAQMD Rule 403.
Note:
lbs/day = pounds per day

11.6.3 Proposed Project

This section presents the potential construction and operation impacts resulting from implementation of the Proposed Project.

11.6.3.1 Construction Impacts

This section presents an evaluation of the potential impacts resulting from construction of the Proposed Project.

Impact AQ-1: *Implementation of the Proposed Project would generate construction impacts that would not exceed the criteria pollutant significance thresholds used by SCAQMD to determine significance of construction emissions. Construction-related impacts would be less than significant.*

Impact Discussion. Temporary impacts from construction were evaluated for the pollutants NOx, reactive organic gases (ROG), CO, SO_2, PM_{10}, and $PM_{2.5}$. Construction equipment and vehicle exhaust would be the primary sources of NOx, ROG, CO, SO_2, and $PM_{2.5}$ emissions, while excavation and grading activities would be the primary sources of PM_{10} emissions. The estimated maximum daily construction emissions for project years 2016 and 2021 are presented in Tables 11-6a and 11-6b, respectively. No construction activities are expected to occur in 2032; therefore the project would not have any emissions associated with construction in that year.

Emission estimates demonstrate that the Proposed Project would be above the significance thresholds for NOx and ROG for 2016 and for NOx in 2021. All other pollutants were below the SCAQMD emission thresholds.

TABLE 11-6a
2016 Proposed Project Construction Emissions

	Emissions (lbs/day)					
Construction Emission Source	**NO_x**	**CO**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Onsite construction emissions	462.2	312.9	81.6	0.9	66.1	17.8
Offsite construction emissions	0.3	3.3	0.1	0.0	1.6	0.4
TOTAL (lbs/day)	462.5	316.2	81.6	0.9	67.7	18.2
SCAQMD Thresholds* (lbs/day)	100	550	75	150	150	55

*Thresholds taken from SCAQMD Significance Thresholds Table, March 2011 (SCAQMD, 2013e).

TABLE 11-6b
2021 Proposed Project Construction Emissions

	Emissions (lbs/day)					
Construction Emission Source	**NO_x**	**CO**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Onsite construction emissions	453.2	269.5	61.9	0.9	66.0	17.7
Offsite construction emissions	0.2	2.2	0.0	0.0	1.6	0.4
TOTAL (lbs/day)	453.4	271.7	62.0	0.9	67.6	18.1
SCAQMD Thresholds* (lbs/day)	100	550	75	150	150	55

*Thresholds taken from SCAQMD Significance Thresholds Table, March 2011 (SCAQMD, 2013e).

Even though construction emissions of NOx and ROG are above the mass daily emission threshold for 2016 and construction emissions of NOx are above the mass daily emission threshold for 2021, these emission scenarios are anticipated to have a very short duration. The potential impacts from construction emissions were further analyzed using the AERMOD dispersion modeling system and compared to the ambient air thresholds.

Tables 11-7a and 11-7b provide a summary of the dispersion model predicted impacts from construction emissions as compared to the ambient air quality thresholds for criteria pollutants for project years 2016 and 2021, respectively. As mentioned above, dispersion modeling was not conducted for construction activities during project year 2032 because no construction activities are scheduled during that time for the project. All pollutant concentrations associated with construction activities would be below their respective ambient thresholds for each applicable averaging period.

TABLE 11-7a
2016 Construction Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold [a] (µg/m³)	Above Threshold?
SO_2	1-hour	0.4	39	196	No
SO_2	3-hour	0.1	26	1,300	No
SO_2	24-hour	0.02	10	105	No
CO	1-hour	152	2,062	23,000	No
CO	8-hour	19	1,547	10,000	No
NO_2	1-hour	57[b]	113	188	No
NO_2	Annual	0.08	28	57	No
PM_{10}	24-hour	5.0	N/A	10.4	No
PM_{10}	Annual	0.02	N/A	1	No
$PM_{2.5}$	24-hour	1.1	N/A	10.4	No
$PM_{2.5}$	Annual	0.004	N/A	1	No

[a] The more stringent of the NAAQS/CAAQS/Localized Significance Threshold (LST)

[b] NO_2/NOx distance method used

TABLE 11-7b
2021 Construction Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold[a] (µg/m³)	Above Threshold?
SO_2	1-hour	0.4	39	196	No
SO_2	3-hour	0.1	26	1,300	No
SO_2	24-hour	0.02	10	105	No
CO	1-hour	123	2,062	23,000	No
CO	8-hour	17	1,547	10,000	No
NO_2	1-hour	53[b]	113	188	No
NO_2	Annual	0.07	28	57	No
PM_{10}	24-hour	4.6	N/A	10.4	No
PM_{10}	Annual	0.01	N/A	1	No
$PM_{2.5}$	24-hour	1.0	N/A	10.4	No
$PM_{2.5}$	Annual	0.003	N/A	1	No

[a] The more stringent of the NAAQS/CAAQS/LST

[b] NO_2/NOx distance method used

Given the short duration of each construction period, the conservativeness of the emission estimates for determining maximum daily construction emissions, the large size of the Proposed Project site, and characteristics of the construction emission sources, modeled ambient air quality impacts at offsite receptors would be less than significant. Therefore, although the Proposed Project construction periods may temporarily exceed the mass daily emission thresholds, the overall impact from construction activities would be less than significant based on modeled ambient impacts from criteria pollutant emissions.

Project Design Measures

Control measures represent actions implemented by CCL as part of the Proposed Project to control exhaust or fugitive dust emissions.

Construction Equipment Control Measures:

- The construction equipment would be equipped with engines meeting CARB requirements for a large fleet at the time of construction (CARB, 2013a). This would include a combination of Tier 3 and Tier 4 compliant equipment.
- The construction equipment would be equipped DPF and lean NOx catalyst, which would result in an 85 percent reduction for particulate matter and a 40 percent reduction for NOx (EPA, 2013f).
- Unnecessary truck and equipment idling would be limited to less than 2 minutes, to the extent feasible.
- Use of all construction equipment would be suspended during second stage smog alerts (SCAQMD, 1993).

Fugitive Dust Control Measures:

- Fugitive dust from vehicle travel on paved roads would be controlled using a 25-foot-long gravel trackout apron, which would result in a 46 percent reduction in particulate matter emissions (SCAQMD, 2013a and 2013b). Paved roads would be cleaned three times daily using a SCAQMD-approved street sweeper, which would result in an additional 45 percent emissions reduction for particulate matter (Western Regional Air Partnership [WRAP], 2006a).
- Fugitive dust from vehicle travel on unpaved roads would be controlled through watering two times daily, the use of dust palliatives, paving as much as possible, and limiting the maximum vehicle speed to 15 miles per hour, which would result in a combined effective control efficiency of 90 percent (SCAQMD, 2013c; WRAP, 2006b).
- Fugitive dust from soil disturbance would be suppressed with hourly watering and dust suppressant application, which would reduce particulate matter emissions by 90 percent (WRAP, 2006c).

Impact AQ-2: *Construction activities associated with the Proposed Project would result in a net increase in daily mass emission estimates of the nonattainment pollutant ozone precursors (NOx or ROG). Construction-related impacts would be less significant due to implementation of Project Design Measures.*

Impact Discussion. The estimated maximum daily construction emissions of ozone precursors NOx and ROG for project years 2016 and 2021 are presented in Tables 11-7a and 11-7b, respectively. No construction activities are anticipated to occur in 2032; therefore the Proposed Project would not have any emissions associated with construction for that year.

Emission estimates demonstrate that the Proposed Project would be above the mass emission pound per day significance thresholds for NOx and ROG for 2016 and for NOx for 2021. Project Design Measures for reducing NOx and ROG as ozone precursors are described under Impact AQ-1, above. Measures include suspension of all construction equipment use during second stage smog alerts and limitation of unnecessary truck and equipment idling to less than 2 minutes, to the extent feasible. Emissions from construction equipment would account for over 99 percent of NOx and ROG emissions from construction of the Proposed Project; therefore NOx and ROG emissions would be well below the thresholds during second stage smog alerts. Additionally, construction emissions would occur over a very short duration, and emissions were calculated assuming all construction equipment would be used for the maximum number of hours on the same day, which is expected

to occur infrequently. After the implementation of Project Design Measures for NOx and ROG as ozone precursors, the construction-related impacts would be less than significant.

Project Design Measures

Same as described above under Impact AQ-1.

Impact AQ-3: *Construction would not expose sensitive receptors to substantial pollutant concentrations. Construction impacts would be less than significant.*

Impact Discussion. Tables 11-8a and 11-8b present a summary of the maximum health impacts that would occur for construction activities associated with the Proposed Project for project years 2016 and 2021, respectively. The locations of the maximum cancer risk and maximum HIC receptors for construction are shown in Figure 11-2.

The maximum construction impact cancer risk from either 2016 or 2021 at the location of the residential maximally exposed individual (MEIR) is predicted to be 0.912 in 1 million. The MEIR is located approximately340 meters northwest from the facility boundary. The maximum construction impact cancer risk from either 2016 or 2021 at the location of the worker maximally exposed individual (MEIW) is predicted to be 0.728 in 1 million. The MEIW is located approximately 340 meters from the northwest boundary of the facility. The maximum construction impact cancer risk from either 2016 or 2021 at the sensitive receptor location is predicted to be 0.0667 in 1 million. The sensitive receptor is located approximately 1,750 meters from the northeast boundary of the facility. Maximum impacts at the MEIR, MEIW, and sensitive receptor locations would not exceed the SCAQMD cancer risk significance threshold of 10 in 1 million.

The HIC non-carcinogenic impacts from construction would be well below the SCAQMD significance threshold of 1.0.

TABLE 11-8a
2016 Construction Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA*
MEIR	0.912 per million	0.0023	N/A
MEIW	0.728 per million	0.0023	N/A
Sensitive Receptor	0.067 per million	0.0002	N/A
SCAQMD Significance Threshold	10 in 1 million	1.0	1.0

*Not applicable. Diesel particulate matter does not have an acute health effect. Short-term effects are accounted for in the particulate matter NAAQS.

TABLE 11-8b
2021 Construction Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA*
MEIR	0.695 per million	0.0018	N/A
MEIW	0.561 per million	0.0018	N/A
Sensitive Receptor	0.061 per million	0.0002	N/A
SCAQMD Significance Threshold	10 in one million	1.0	1.0

*Not applicable. Diesel particulate matter does not have an acute health effect. Short-term effects are accounted for in the particulate matter NAAQS.

Based on the predicted public health impacts from construction of the Proposed Project, impacts would be less than significant.

Additionally, the sum of maximum health impacts from construction, shown in Tables 11-8a and 11-8b, and operation, shown in Tables 11-13a, 11-13b, and 11-13c, would be below the SCAQMD thresholds.

Project Design Measures

Same as described above under Impact AQ-1.

11.6.3.2 Operation Impacts

This section presents an evaluation of the potential impacts resulting from operation of the Proposed Project.

Impact AQ-4: *Implementation of the Proposed Project would be consistent with applicable air quality plans, therefore impacts would be less than significant.*

Impact Discussion. SCAQMD air quality plans (SCAQMD, 1997; 1999; 2013d) and the air quality objectives in the City of Santa Clarita Draft General Plan Update (City of Santa Clarita, 2010) were reviewed to determine whether the project would conflict with air quality plans. SCAQMD's plans present the strategies and control measures needed to continue to improve air quality in the SCAB. Upon review, it was determined that implementation of the Proposed Project would be consistent with applicable air quality plans; therefore impacts would be less than significant.

Project Design Measures

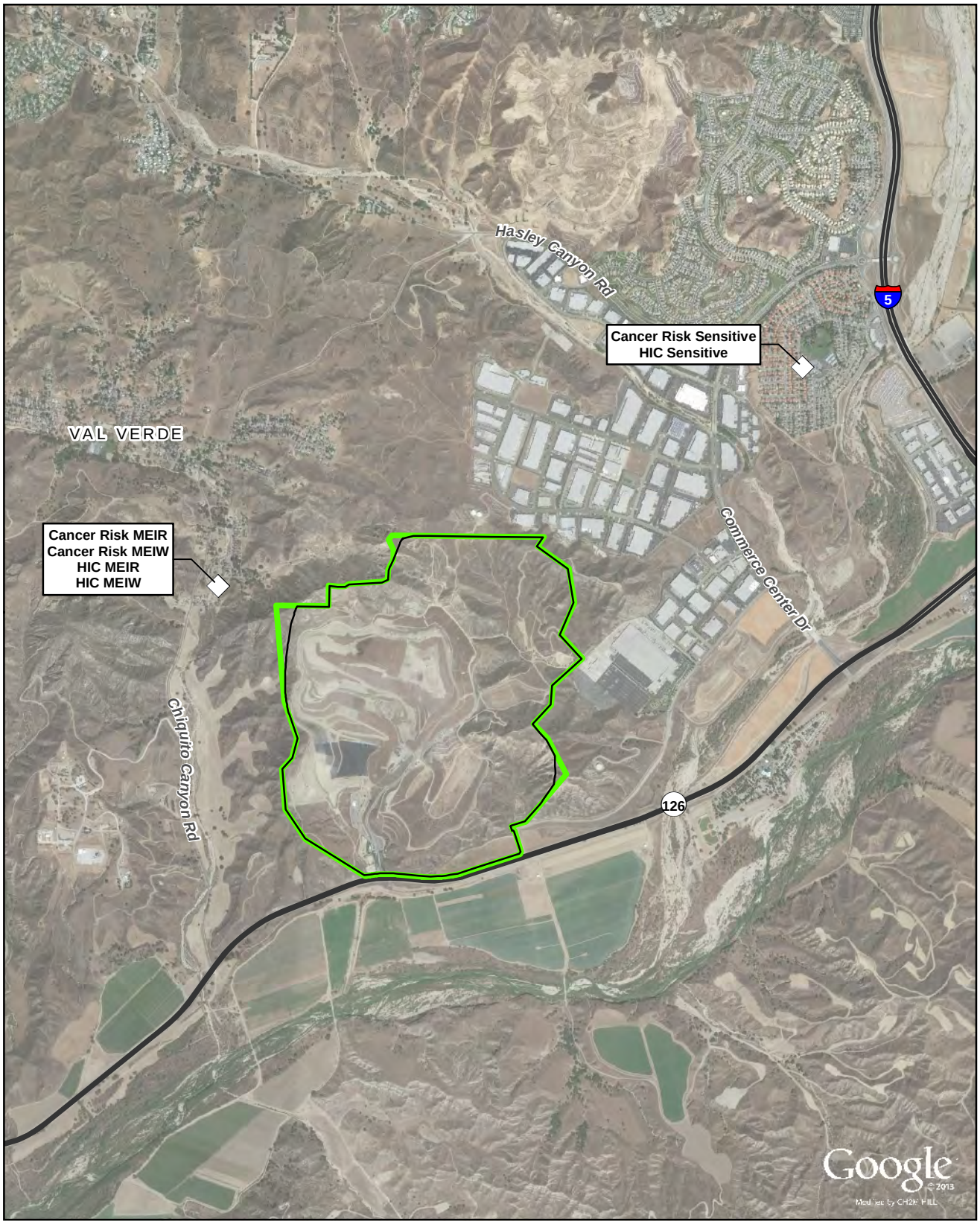
Control measures represent actions implemented by CCL as part of the Proposed Project to control exhaust or fugitive dust emissions.

Off-Road Diesel Equipment Control Measures:

- Additional off-road diesel equipment would be equipped with engines meeting Tier 4 emission standards.
- Additional off-road diesel equipment would be equipped with DPF, which would result in an 85 percent reduction for particulate matter and a 40 percent reduction for NOx (EPA, 2013f).
- Unnecessary truck and equipment idling would be limited to less than 2 minutes, to the extent feasible.
- Use of all construction equipment would be suspended during second stage smog alerts (SCAQMD, 1993).

Fugitive Dust Control Measures:

- Fugitive dust from vehicle travel on paved roads would be controlled through the use of a 25-foot-long gravel trackout apron and three times daily cleaning of the paved roads, which would result in a 90 percent reduction in particulate matter emissions (SCAQMD, 2013a and 2013b; WRAP, 2006a).
- Fugitive dust from vehicle travel on unpaved roads would be controlled through watering two times daily, applying dust palliatives at least twice a year, paving as much as possible, and limiting the maximum vehicle speed to 15 miles per hour, which would result in a combined effective control efficiency of 90 percent (SCAQMD, 2013c; WRAP, 2006b).
- Fugitive dust from soil disturbance would be suppressed with hourly watering and application of dust suppressants, which would reduce particulate matter emissions by 90 percent (SCAQMD, 2013a; WRAP, 2006c).



LEGEND

- ◇ Maximum Health Impact Location
- Major Road
- Limit of Disturbance
- Project Boundary

N

0 0.25 0.5

Miles

FIGURE 11-2
Maximum Health Impact Locations from Proposed Project Construction Activities
Chiquita Canyon Landfill
Master Plan Revision

Impact AQ-5: *Operation of the Proposed Project would generate impacts that would not exceed the criteria pollutant significance thresholds used by SCAQMD to determine significance of operational emissions. Therefore, operational-related impacts would be less than significant.*

Impact Discussion. Impacts from operation were evaluated for the pollutants NOx, ROG, CO, SO_2, PM_{10}, and $PM_{2.5}$. Operation-related emissions would result from vehicle exhaust emissions, fugitive dust, flare emissions, and fugitive LFG. Emissions were not calculated for the material recovery facility, the truck storage and maintenance facility, or the LFGTE plant because operations associated with these facilities were assumed to be the included with existing conditions and would not change with the Proposed Project.

As described in Section 11.2 and Appendix F, vehicle exhaust emissions from waste trucks were calculated and included in the air dispersion modeling and HRA, but were not included in the maximum daily operational totals per the SCAQMD *CEQA Air Quality Handbook* (SCAQMD, 1993). The Proposed Project would result in a net reduction in emissions from waste trucks when compared to the No Project Alternative. The estimated operational emissions are presented in Tables 11-9a, 11-9b, and 11-9c for project years 2016, 2021, and 2032, respectively. The Proposed Project operational emissions would exceed the SCAQMD mass daily operational thresholds for NOx for 2032.

Even though operational emissions from NOx are above the mass daily emission threshold for 2032, this emission scenario represents maximum potential daily emissions, which were estimated using conservative assumptions and are not anticipated to occur every day of the year. Due to the flares' location in the middle of the site, a buffer would exist between the emission source and potential offsite receptors.

TABLE 11-9a
2016 Proposed Project Operation Emissions

	Emissions (lbs/day)					
Operation Emission Source	**NO_x**	**CO**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Onsite operation emissions	5.3	20.2	5.4	0.1	7.1	1.4
Offsite operation emissions[a]	0.1	0.9	0.0	0.0	0.4	0.1
TOTAL (lbs/day)	5.4	21.1	5.4	0.1	7.5	1.5
SCAQMD Thresholds (lbs/day)[b]	55	550	55	150	150	55

[a] Does not include offsite vehicle exhaust emissions from waste trucks.

[b] Thresholds taken from SCAQMD Significance Thresholds Table, March 2011 (SCAQMD, 2013e).

TABLE 11-9b
2021 Proposed Project Operation Emissions

	Emissions (lbs/day)					
Operation Emission Source	**NO_x**	**CO**	**ROG**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Onsite operation emissions	46.1	77.4	17.4	43.6	11.5	5.0
Offsite operation emissions[a]	0.1	1.4	0.0	0.0	1.0	0.3
TOTAL (lbs/day)	46.2	78.8	17.4	43.6	12.5	5.2
SCAQMD Thresholds (lbs/day)[b]	55	550	55	150	150	55

[a] Does not include offsite vehicle exhaust emissions from waste trucks.

[b] Thresholds taken from SCAQMD Significance Thresholds Table, March 2011 (SCAQMD, 2013e).

TABLE 11-9c
2032 Proposed Project Operation Emissions

Operation Emission Source[a]	Emissions (lbs/day)					
	NO_x	CO	ROG	SO_2	PM_{10}	$PM_{2.5}$
Onsite operation emissions	79.2	106.7	22.3	87.0	14.8	8.3
Offsite operation emissions	0.1	1.2	0.0	0.0	1.0	0.3
TOTAL (lbs/day)	79.3	107.8	22.3	87.0	15.8	8.6
SCAQMD Thresholds (lbs/day)[b]	55	550	55	150	150	55

[a] Does not include vehicle exhaust emissions from waste trucks.

[b] Thresholds taken from SCAQMD Significance Thresholds Table, March 2011 (SCAQMD, 2013e).

Additionally, the majority of NOx emissions in 2032 come from operation of the flare. As described in Chapter 2.0, Project Description, the majority of the LFG collected would go to the existing, approved LFGTE plant instead of the flares. NOx emissions from combustion of LFG in the LFGTE plant turbines would be lower than NOx emissions from the flare.

The potential impacts from operational emissions were further analyzed using the AERMOD dispersion modeling system and compared to the ambient air thresholds.

Tables 11-10a, 11-10b, and 11-10c provide a summary of the model results from operational impacts as compared to the air quality thresholds for project years 2016, 2021, and 2032, respectively. NO_X, SO_2, CO, $PM_{2.5}$, and PM_{10} concentrations would be below their respective threshold for each applicable averaging period.

TABLE 11-10a
2016 Operation Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold* (µg/m³)	Above Threshold?
SO_2	1-hour	0.1	39	196	No
SO_2	3-hour	0.1	26	1,300	No
SO_2	24-hour	0.03	10	105	No
CO	1-hour	17	2,062	23,000	No
CO	8-hour	12	1,547	10,000	No
NO_2	1-hour	63	113	188	No
NO_2	Annual	1	28	57	No
PM_{10}	24-hour	1.7	N/A	2.5	No
PM_{10}	Annual	0.4	N/A	1	No
$PM_{2.5}$	24-hour	0.4	N/A	2.5	No
$PM_{2.5}$	Annual	0.1	N/A	1	No

*The more stringent of the NAAQS/CAAQS/LST

TABLE 11-10b
2021 Operation Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold[a] (µg/m³)	Above Threshold?
SO_2	1-hour	3	39	196	No
SO_2	3-hour	3	26	1,300	No
SO_2	24-hour	1	10	105	No
CO	1-hour	37	2,062	23,000	No
CO	8-hour	19	1,547	10,000	No
NO_2	1-hour	29[b]	113	188	No
NO_2	Annual	2	28	57	No
PM_{10}	24-hour	2.2	N/A	2.5	No
PM_{10}	Annual	0.5	N/A	1	No
$PM_{2.5}$	24-hour	0.9	N/A	2.5	No
$PM_{2.5}$	Annual	0.1	N/A	1	No

[a] The more stringent of the NAAQS/CAAQS/LST

[b] NO_2/NOx distance method used

TABLE 11-10c
2032 Operation Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold* (µg/m³)	Above Threshold?
SO_2	1-hour	7	39	196	No
SO_2	3-hour	6	26	1,300	No
SO_2	24-hour	1	10	105	No
CO	1-hour	37	2,062	23,000	No
CO	8-hour	12	1,547	10,000	No
NO_2	1-hour	63	113	188	No
NO_2	Annual	1	28	57	No
PM_{10}	24-hour	2.2	N/A	2.5	No
PM_{10}	Annual	0.5	N/A	1	No
$PM_{2.5}$	24-hour	0.8	N/A	2.5	No
$PM_{2.5}$	Annual	0.1	N/A	1	No

*The more stringent of the NAAQS/CAAQS/LST

Given the conservativeness of the emission estimates for determining maximum daily emissions and the variability of operations of the facility day-to-day, these increases in maximum daily emissions would result in a less-than-significant modeled ambient impact on air quality at offsite receptors. Therefore, although the Proposed Project maximum emissions periods may temporarily exceed the mass daily emission thresholds, the overall impact from operational activities would be less than significant based on modeled ambient impacts from criteria pollutant emissions.

Project Design Measures

Same as described above under Impact AQ-4.

Impact AQ-6: *Operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation for CO. Operation emissions would be less than significant.*

Impact Discussion. A CO hotspot analysis of the worst intersections and dispersion modeling of emissions from operation activities were conducted to evaluate whether an air quality standard would be violated. The following discussion presents the results of these evaluations.

CO Hotspot Analysis: Tables 11-11 and 11-12 present the peak 1-hour and 8-hour CO concentrations for existing conditions in 2013, 2014 conditions without the Proposed Project, and 2014 conditions with the Proposed Project. The analysis shows that the maximum 1-hour CO concentrations would be well below the national standard of 35 ppm and the state standard of 20 ppm. The maximum 8-hour concentration would also be well below the national and state standards of 9 ppm. The Proposed Project would not cause an exceedance of the CO ambient air standards.

TABLE 11-11
Maximum Predicted 1-hour CO Concentrations

Scenario	Maximum Modeled 1-hour CO Concentration (ppm)	Background CO Concentration (ppm)	Total 1-hour CO Concentration (ppm)
SR-126 and Wolcott Way			
Existing Conditions (2013)	0.3	1.8	2.1
2014 Without Proposed Project	0.2	1.8	2.0
2014 With Proposed Project	0.3	1.8	2.1
SR-126 and Commerce Center Drive			
Existing Conditions (2013)	0.7	1.8	2.5
2014 Without Proposed Project	0.6	1.8	2.4
2014 With Proposed Project	0.6	1.8	2.4
State Threshold			20
National Threshold			35

Note:
Background concentrations are the highest observed 1-hour CO concentrations from 2009 to 2011.

TABLE 11-12
Maximum Predicted 8-hour CO Concentrations

Scenario	Maximum Modeled 8-hour CO Concentration (ppm)	Background CO Concentration (ppm)	Total 8-hour CO Concentration (ppm)
SR-126 and Wolcott Way			
Existing Conditions (2013)	0.21	1.35	1.56
2014 Without Proposed Project	0.14	1.35	1.49
2014 With Proposed Project	0.21	1.35	1.56

TABLE 11-12
Maximum Predicted 8-hour CO Concentrations

Scenario	Maximum Modeled 8-hour CO Concentration (ppm)	Background CO Concentration (ppm)	Total 8-hour CO Concentration (ppm)
SR-126 and Commerce Center Drive			
Existing Conditions (2013)	0.49	1.35	1.84
2014 Without Proposed Project	0.42	1.35	1.77
2014 With Proposed Project	0.42	1.35	1.77
National and State Threshold			9

Notes:
Existing background concentrations are the highest observed 8-hour CO concentrations from 2009 to 2011.
The maximum 8-hour CO concentration is calculated by multiplying the project level 1-hour CO contribution by the 8-hour persistence factor (0.7) and adding the 8-hour CO background concentration.

Based on the CALINE4 modeled results above, the Proposed Project would not cause or significantly contribute to a modeled CO violation. Therefore, operation of the Proposed Project would have a less-than-significant impact for CO at offsite receptors and at hotspots near roadways.

Project Design Measures

Same as previously described under Impact AQ-4.

Impact AQ-7: *Operation of the Proposed Project would result in a net increase in emissions of the nonattainment pollutant, ozone precursors (NOx or ROG). Operation impacts would be less than significant due to implementation of Project Design Measures.*

Impact Discussion. The estimated maximum daily mass emissions from operation of the Proposed Project are presented in Tables 11-9a, 11-9b, and 11-9c for project years 2016, 2021, and 2032, respectively. The Proposed Project operational emissions would exceed the SCAQMD operation mass daily thresholds for ozone precursor NOx for 2032.

Even though operational emissions from NOx are above the mass daily emission threshold for 2032, this emission scenario represents maximum potential daily emissions, which were estimated using conservative assumptions and are not anticipated to occur for every day of the year. Due to the flares' location in the middle of the site, a buffer would exist between the emission source and potential offsite receptors.

Additionally, the majority of NOx emissions in 2032 come from operation of the flare. As described in Chapter 2.0, Project Description, the majority of the LFG collected would go to the existing, approved LFGTE plant instead of the flares as a Project Design Measure. NOx emissions from combustion of LFG in the LFGTE plant turbines would be lower than NOx emissions from the flare.

After the implementation of the Project Design Measures for NOx as an ozone precursor, impacts from operation of the Proposed Project would be less than significant.

Project Design Measures

Same as previously described under Impact AQ-4 with the addition of the following:

- The Proposed Project includes an existing, approved LFGTE plant, to which the majority of the LFG collected would be sent.

Impact AQ-8: *Operation would not expose sensitive receptors to substantial pollutant concentrations. Operation impacts would be less than significant.*

Impact Discussion. Tables 11-13a, 11-13b, and 11-13c present a summary of the maximum health impacts that would occur for operation activities associated with the Proposed Project in the years 2016, 2021, and 2032, respectively. The locations of the maximum cancer risk and maximum HIC receptors for operation are shown in Figure 11-3.

The maximum operational impact cancer risk from 2016, 2021, or 2032 at the location of the MEIR is predicted to be 2.37 in 1 million. The MEIR is located approximately 340 meters northwest from the facility boundary. The maximum operational impact cancer risk from 2016, 2021, or 2032 at the location of the MEIW is predicted to be 0.760 in 1 million. The MEIW is located approximately 960 meters from the facility's southeast boundary. The maximum operational impact cancer risk from 2016, 2021, or 2032 at the location of the sensitive receptor is predicted to be 0.823 in 1 million. The sensitive receptor is located approximately 1,750 meters from the facility's northeast boundary. Maximum impacts at the MEIR, MEIW, and sensitive receptor locations would not exceed the SCAQMD cancer risk significance threshold of 10 in 1 million.

The HIC and HIA non-carcinogenic impacts from operation would be well below the SCAQMD significance threshold of 1.0.

TABLE 11-13a
2016 Operation Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA*
MEIR	0.557 per million	0.0006	N/A
MEIW	0.417 per million	0.0013	N/A
Sensitive Receptor	0.279 per million	0.0003	N/A
SCAQMD Significance Threshold	10 in 1 million	1.0	1.0

*Not applicable. Diesel particulate matter does not have an acute health effect. Short-term effects are accounted for in the particulate matter NAAQS.

TABLE 11-13b
2021 Operation Risk Summary

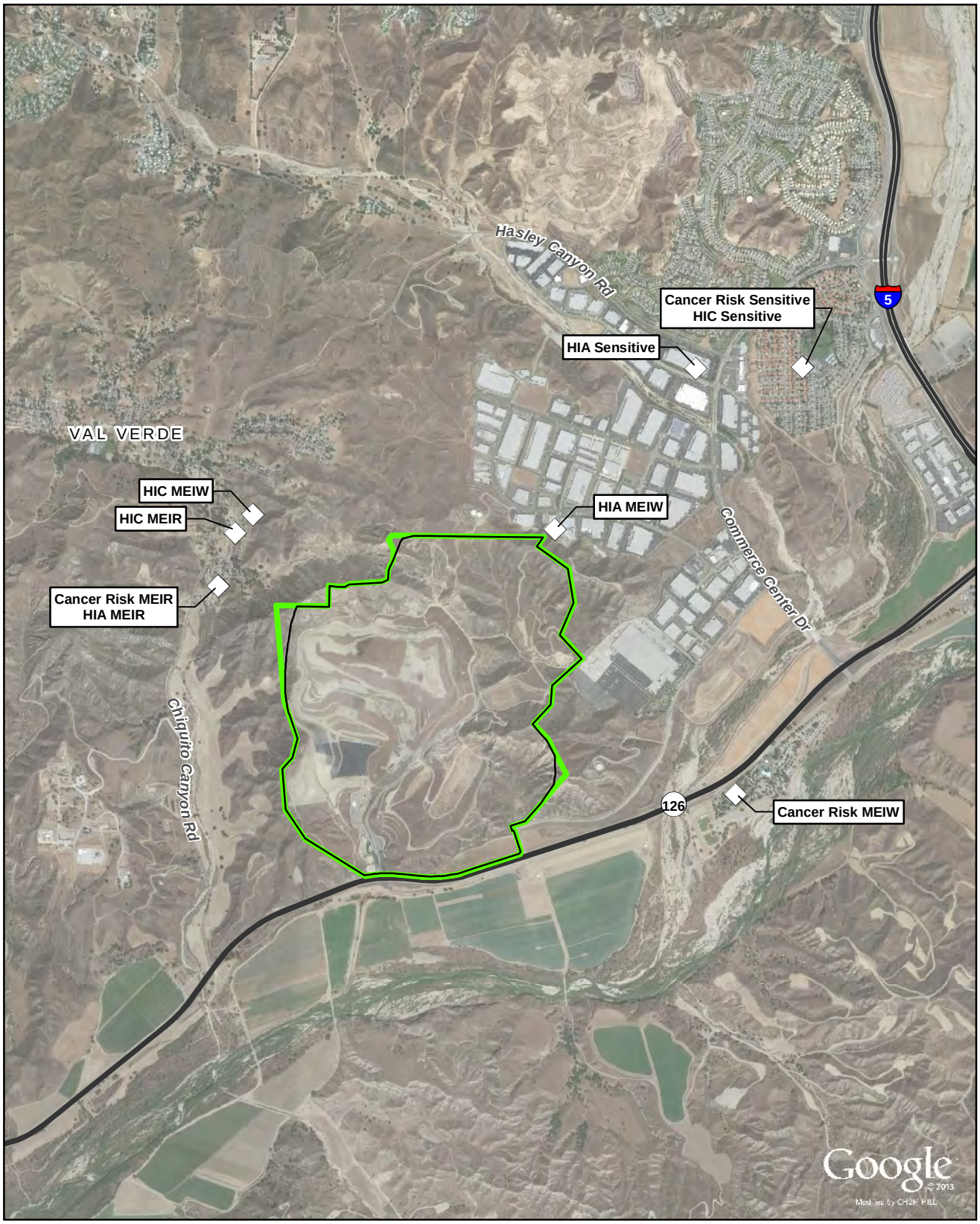
Receptor Location	Max Cancer	Max HIC	Max HIA
MEIR	0.947 per million	0.0026	0.027
MEIW	0.760 per million	0.0028	0.053
Sensitive Receptor	0.510 per million	0.0007	0.016
SCAQMD Significance Threshold	10 in 1 million	1.0	1.0

TABLE 11-13c
2032 Operation Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA
MEIR	2.370 per million	0.0163	0.339
MEIW	0.652 per million	0.0182	0.385
Sensitive Receptor	0.823 per million	0.0015	0.163
SCAQMD Significance Threshold	10 in 1 million	1.0	1.0

The analysis of operational impacts on public health above demonstrates that the operational impacts would be less than significant.

Additionally, the sum of maximum health impacts from construction, shown in Tables 11-13a, 11-13b, and 11-13c, would be below the SCAQMD thresholds.



LEGEND

- Maximum Health Impact Location
- Major Road
- Limit of Disturbance
- Project Boundary

N

0 0.25 0.5
Miles

FIGURE 11-3
Maximum Health Impact Locations from Proposed Project Operation Activities
Chiquita Canyon Landfill
Master Plan Revision

Project Design Measures

Same as previously described under Impact AQ-1.

Impact AQ-10: *Operation would not create objectionable odors affecting a substantial number of people. Operation impacts would be less than significant.*

Impact Discussion. The Bay Area Air Quality Management District (BAAQMD) recognizes that there is not one piece of information that can solely be used to determine the significance of an odor impact. Therefore, the information provided in Section 11.2 and Appendix F was evaluated collectively to determine the potential for a significant odor impact. The BAAQMD *CEQA Air Quality Guidelines* suggest that it is possible for an existing odor source to have nearby sensitive receptors, but due to existing factors (wind, topography, seasonality of the odor source, etc.) may not discover any odor complaints from all nearby sensitive receptors. This statement holds true for CCL, in that the 13 confirmed complaints discussed above all came from the Val Verde neighborhood located northwest of the landfill. The additional areas of developed land identified in Figure 11-1 do not have any history of confirmed odor complaints on file for the timeframe evaluated. While there are some sensitive receptors/land uses located near the landfill boundaries, CCL is an existing odor source with a less-than-significant complaint history.

Currently, CCL also employs a comprehensive approach to controlling odors by employing several odor control measures. The utilization of LFG collection and control systems, daily cover, water trucks, odor neutralizers, and good housekeeping practices, when applied in concert, can be effective in reducing the creation as well as the transport of offensive odors. CCL also utilizes portable wind fans that can be moved around the landfill boundaries and ridge line based on the immediate wind conditions, supplementing the air flow to dissipate odors. Occasionally, the District Inspectors will visit the landfill when responding to odor complaints. Inspectors have recorded actions used by CCL to mitigate the odors at the time of their visit, including spraying odor neutralizers, utilizing portable wind fans, and delaying future deliveries of alternative daily cover from the supplier to allow for the wind patterns to change, reducing impacts to the neighborhood.

SCAQMD does have conditions in the CCL Title V operating permit requiring the landfill to stop operations if confirmed odors cannot be mitigated. The landfill can be penalized for failing to cease operations or mitigate odors as required in the operating permit. Once the odors are mitigated, the landfill may resume operations.

Additionally, CCL has an Odor Hotline (phone number: 661-253-5155) the public can call to report odor complaints, allowing faster, more direct action to be taken to resolve the complaint. Some SCAQMD odor complaints for CCL included notes from the District Inspector indicating that CCL's Assistant District Manager and Vice President responded to odor complaints by visiting the complainants at their residences to quickly address any issues.

CCL has sensitive receptors near its boundaries, but based on the existing complaint history and current operational practices the odor-related impacts are less than significant.

Project Design Measures

Project Design Measures related to odor impacts are described above as part of the significance determination.

11.7 Mitigation Measures

Impacts have been mitigated to the extent feasible through the implementation of Project Design Measures. Therefore additional mitigation measures have not been identified.

11.8 Significance After Mitigation

Impacts from the Proposed Project have been mitigated to the extent feasible through the implementation of the Project Design Measures described in Section 11.6.3. Implementation of the Project Design Measures would result in less-than-significant impacts associated with air quality.

11.9 Cumulative Impacts

The cumulative impact analysis considers the combined air quality impacts of the Proposed Project with the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis. The cumulative projects discussed in Chapter 3.0 would add a combination of residential, commercial, open space, public, and industrial uses in the vicinity of the Proposed Project. The Newhall Ranch developments, located immediately south, east, and west of the Proposed Project, would be the most likely to experience air quality impacts related to project construction and operation. Specific implementation timelines for the Newhall Ranch developments are not available; however, construction is not expected to be complete until after project year 2016, therefore, potential cumulative impacts were not assessed for that year.

This section presents the potential cumulative construction and operation impacts resulting from implementation of the Proposed Project.

11.9.1 Cumulative Construction Impacts

11.9.1.1 Criteria Pollutant Emission Impacts

Potential cumulative criteria pollutant emission impacts resulting from construction of the Proposed Project were assessed. The estimated maximum daily construction emissions for project year 2021 are presented in Table 11-6b, above. No construction activities are expected to occur in 2032; therefore, the project would not have any emissions associated with construction in that year. The potential cumulative impacts from construction emissions were analyzed using the AERMOD dispersion modeling system and compared to the ambient air thresholds. An enhanced receptor grid was used to capture future land use changes due to cumulative projects.

Table 11-14 provides a summary of the dispersion model predicted cumulative impacts from construction emissions compared to the ambient air quality thresholds for criteria pollutants for project year 2021. As mentioned previously, dispersion modeling was not conducted for construction activities during project year 2032 because no construction activities are scheduled during that time for the project. All pollutant concentrations associated with construction activities would be below their respective ambient thresholds for each applicable averaging period.

TABLE 11-14
2021 Cumulative Construction Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold[a] (µg/m³)	Above Threshold?
SO_2	1-hour	0.5	39	196	No
SO_2	3-hour	0.2	26	1,300	No
SO_2	24-hour	0.04	10	105	No
CO	1-hour	140	2,062	23,000	No
CO	8-hour	31	1,547	10,000	No
NO_2	1-hour	59[b]	113	188	No
NO_2	Annual	0.11	28	57	No
PM_{10}	24-hour	7.9	N/A	10.4	No
PM_{10}	Annual	0.02	N/A	1	No
$PM_{2.5}$	24-hour	1.7	N/A	10.4	No
$PM_{2.5}$	Annual	0.005	N/A	1	No

[a] The more stringent of the NAAQS/CAAQS/LST

[b] NO_2/NOx distance method used

Given the short duration of each construction period, the conservativeness of the emission estimates for determining maximum daily construction emissions, the large size of the Proposed Project site, and characteristics of the construction emission sources, modeled cumulative ambient air quality impacts at offsite receptors would be less than significant. Therefore, although the Proposed Project construction periods may temporarily exceed the mass daily emission thresholds, after the implementation of Project Design Measures the overall cumulative impact from construction activities would be less than significant based on modeled ambient impacts from criteria pollutant emissions.

11.9.1.2 Health Impacts

Table 11-15 presents a summary of the cumulative maximum health impacts that would occur for construction activities associated with the Proposed Project for project year 2021. The locations of the cumulative maximum cancer risk and cumulative maximum HIC receptors for construction are shown in Figure 11-4.

The maximum cumulative construction impact cancer risk for project year 2021 at the location of the residential maximally exposed individual (MEIR) is predicted to be 2.54 in 1 million. The maximum cumulative construction impact cancer risk for project year 2021 at the location of the worker maximally exposed individual (MEIW) is predicted to be 2.03 in 1 million. The maximum cumulative construction impact cancer risk for project year 2021 at the sensitive receptor location is predicted to be 2.54 in 1 million. Because the Newhall Ranch developments include residential, commercial, open space, public, and industrial areas, receptors could not be specified. Therefore, any receptor within the development was conservatively considered either residential, worker, or sensitive. The MEIR, MEIW, and sensitive receptor is located approximately 400 meters west of the facility boundary in the Newhall Ranch development. Maximum cumulative impacts at the MEIR, MEIW, and sensitive receptor locations would not exceed the SCAQMD cancer risk significance threshold of 10 in 1 million.

The cumulative HIC non-carcinogenic impacts from construction would be well below the SCAQMD significance threshold of 1.0 (see Table 11-15).

TABLE 11-15
2021 Cumulative Construction Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA*
MEIR	2.54 per million	0.00646	N/A
MEIW	2.03 per million	0.00646	N/A
Sensitive Receptor	2.54 per million	0.00646	N/A
SCAQMD Significance Threshold	10 in one million	1.0	1.0

*Not applicable. Diesel particulate matter does not have an acute health effect. Short-term effects are accounted for in the particulate matter NAAQS.

Based on the predicted cumulative public health impacts from construction of the Proposed Project, cumulative impacts would be less than significant.

Additionally, the sum of cumulative maximum health impacts from construction, shown in Table 11-14, and operation, shown in Tables 11-17a, and 11-17b, would be below the SCAQMD thresholds.

11.9.2 Cumulative Operation Impacts

11.9.2.1 Criteria Pollutant Emission Impacts

Potential cumulative criteria pollutant emission impacts resulting from operation of the Proposed Project were assessed. The estimated operational emissions are presented in Tables 11-9b and 11-9c for project years 2021 and 2032, respectively. The potential cumulative impacts from operational emissions were analyzed using the AERMOD dispersion modeling system and compared to the ambient air thresholds. An enhanced receptor grid was used to capture future land use changes due to cumulative projects.

Tables 11-16a and 11-16b provide a summary of the cumulative model results from operational impacts as compared to the air quality thresholds for project years 2021 and 2032, respectively. NO_X, SO_2, and CO cumulative concentrations would be below their respective threshold for each applicable averaging period. Annual $PM_{2.5}$ cumulative concentrations would be below the threshold. However, the project would exceed the PM_{10} annual and PM_{10} and $PM_{2.5}$ 24-hour thresholds for project years 2021 and 2032 once construction of the Newhall Ranch developments has begun.

TABLE 11-16a
2021 Cumulative Operation Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold[a] (µg/m³)	Above Threshold?
SO_2	1-hour	5	39	196	No
SO_2	3-hour	4	26	1,300	No
SO_2	24-hour	1	10	105	No
CO	1-hour	59	2,062	23,000	No
CO	8-hour	25	1,547	10,000	No
NO_2	1-hour	29[b]	113	188	No
NO_2	Annual	3	28	57	No
PM_{10}	24-hour	17.1	N/A	2.5	Yes
PM_{10}	Annual	2.8	N/A	1	Yes
$PM_{2.5}$	24-hour	4.2	N/A	2.5	Yes
$PM_{2.5}$	Annual	0.7	N/A	1	No

[a] The more stringent of the NAAQS/CAAQS/LST

[b] NO_2/NOx distance method used

TABLE 11-16b
2032 Cumulative Operation Dispersion Model Results

Pollutant	Averaging Period	Model Result (µg/m³)	Background (if applicable) (µg/m³)	Threshold* (µg/m³)	Above Threshold?
SO_2	1-hour	10	39	196	No
SO_2	3-hour	8	26	1,300	No
SO_2	24-hour	3	10	105	No
CO	1-hour	62	2,062	23,000	No
CO	8-hour	24	1,547	10,000	No
NO_2	1-hour	71	113	188	No
NO_2	Annual	2	28	57	No
PM_{10}	24-hour	17.0	N/A	2.5	Yes
PM_{10}	Annual	2.8	N/A	1	Yes
$PM_{2.5}$	24-hour	4.2	N/A	2.5	Yes
$PM_{2.5}$	Annual	0.7	N/A	1	No

*The more stringent of the NAAQS/CAAQS/LST

LEGEND

- ◇ Maximum Health Impact Location
- Major Road
- Limit of Disturbance
- Project Boundary

N

0 0.25 0.5

Miles

FIGURE 11-4
Maximum Cumulative Health Impact Locations from Proposed Project Construction Activities
Chiquita Canyon Landfill
Master Plan Revision

Given the conservativeness of the emission estimates for determining maximum daily emissions and the variability of operations of the facility day-to-day, these increases in maximum daily emissions would result in a less-than-significant cumulative modeled ambient impact on air quality at offsite receptors for NOx, SO_2, CO, and annual $PM_{2.5}$. Therefore, although the Proposed Project maximum emissions periods may temporarily exceed the mass daily emission thresholds, after the implementation of Project Design Measures the overall cumulative impact from operational activities would be less than significant for NOx, SO_2, CO, and annual $PM_{2.5}$ based on modeled ambient impacts from criteria pollutant emissions.

PM_{10} annual and PM_{10} and $PM_{2.5}$ 24-hour cumulative concentrations would exceed their respective thresholds for project years 2021 and 2032, primarily due to fugitive dust from travel on onsite paved roads. Continuous watering of onsite paved roads to mitigate PM_{10} and $PM_{2.5}$ cumulative impacts was considered; however, it was determined that mitigation would not be feasible because of water availability concerns in the project area. Therefore, the overall cumulative impact from operational activities would be significant and unavoidable for PM_{10} and $PM_{2.5}$ based on modeled ambient impacts from criteria pollutant emissions. Impacts would not occur until construction of the proposed Newhall Ranch developments.

11.9.2.2 Localized CO Impacts

A CO hotspot analysis of the worst intersections and dispersion modeling of emissions from operation activities were conducted for the Proposed Project to evaluate whether an air quality standard would be violated. Cumulative projects expected to affect traffic conditions in the project area include the Newhall Ranch developments and the SR-126 Improvements Project. The SR-126 Improvements Project would improve traffic conditions at the SR 126/Commerce Center Drive intersection and the project is proposed to accommodate future traffic growth in the area. The Newhall Ranch developments would require detailed CEQA analysis and adequate mitigation measures; therefore, it is reasonable to assume that they would also include mitigation measures (including roadway and intersection improvements) to reduce any cumulative traffic impacts on the surrounding road network to a less-than-significant level. Therefore operation of the Proposed Project would have a less-than-significant cumulative impact for CO at offsite receptors and at hotspots near roadways.

11.9.2.3 Health Impacts

Tables 11-17a and 11-17b present a summary of the maximum cumulative health impacts that would occur for operation activities associated with the Proposed Project in the years 2021 and 2032, respectively. The locations of the maximum cumulative cancer risk and maximum cumulative HIC receptors for operation are shown in Figure 11-5.

The maximum cumulative operational impact cancer risk for project years 2021 or 2032 at the location of the MEIR is predicted to be 5.66 in 1 million. The maximum cumulative operational impact cancer risk for 2021 or 2032 at the location of the MEIW is predicted to be 1.33 in 1 million. The maximum operational impact cancer risk for 2021 or 2032 at the location of the sensitive receptor is predicted to be 5.66 in 1 million. The MEIR, MEIW, and sensitive impacts are located 860 meters east from the facility boundary in the Newhall Ranch development. Maximum cumulative impacts at the MEIR, MEIW, and sensitive receptor locations would not exceed the SCAQMD cancer risk significance threshold of 10 in 1 million.

The HIC and HIA non-carcinogenic cumulative impacts from operation would be well below the SCAQMD significance threshold of 1.0.

TABLE 11-17a
2021 Cumulative Operation Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA
MEIR	3.77 per million	0.00755	0.0764
MEIW	1.33 per million	0.00755	0.0764
Sensitive Receptor	3.77 per million	0.00755	0.0764
SCAQMD Significance Threshold	10 in 1 million	1.0	1.0

TABLE 11-17b
2032 Cumulative Operation Risk Summary

Receptor Location	Max Cancer	Max HIC	Max HIA
MEIR	5.66 per million	0.030	0.56
MEIW	1.12 per million	0.030	0.56
Sensitive Receptor	5.66 per million	0.030	0.56
SCAQMD Significance Threshold	10 in 1 million	1.0	1.0

The analysis of cumulative operational impacts on public health above demonstrates that the cumulative operational impacts would be less than significant.

Additionally, the sum of cumulative maximum health impacts from construction, shown in Table 11-14, and operation, shown in Tables 11-17a, and 11-17b, would be below the SCAQMD thresholds.

11.9.2.4 Odor Impacts

As discussed under Impact AQ-10, CCL employs a comprehensive approach to controlling odors by employing numerous odor control measures. When the Newhall Ranch development has been constructed, additional sensitive receptors will be located near the CCL site boundaries. CCL will continue to implement current operational practices associated with odor control; therefore cumulative odor-related impacts are expected to be less then significant.

11.9.3 Mitigation Measures Required for Cumulative Impacts

Impacts have been mitigated to the extent feasible through the implementation of Project Design Measures. Therefore, additional mitigation measures have not been identified.

LEGEND

- ◇ Maximum Health Impact Location
- Major Road
- Limit of Disturbance
- Project Boundary

N

0 0.25 0.5

Miles

FIGURE 11-5
Maximum Cumulative Health Impact Locations from Proposed Project Operation Activities
Chiquita Canyon Landfill
Master Plan Revision

CHAPTER 12.0

Greenhouse Gas Emissions and Climate Change

12.1 Introduction

This chapter provides an evaluation of the potential effects implementation of the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project) would have on greenhouse gas (GHG) emissions and climate change. This chapter includes a brief description of the existing conditions, with an overview of the regulatory, climate change, GHG emissions, and operational setting of the Proposed Project. An explanation of the impact assessment methodology and a presentation of the potential impacts of the Proposed Project and mitigation measures are also provided.

12.1.1 Climate Change

Global climate change (GCC) is expressed as changes in the average weather of the earth that are measured by temperature, wind patterns, precipitation, and storms over a long period of time [United Nations Intergovernmental Panel on Climate Change (IPCC), 2013]. Since the time that work began on this Environmental Impact Report (EIR), scientific understanding of the causes and effects of climate change, and consensus regarding the link between climate change and anthropogenic GHG emissions has increased tremendously.

The IPCC now states that the warming of the climate system is "unequivocal", "…human influence on the climate system is clear…", "…is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century", and "Continued emissions of greenhouse gases will cause further warming and changes in all components of the climate system." (IPCC, 2013). The most recent U.S. National Climate Assessment states that, "While scientists continue to refine projections of the future, observations unequivocally show that climate is changing and that the warming of the past 50 years is primarily due to human-induced emissions of heat-trapping gases", and that "Global climate is projected to continue to change over this century and beyond, but there is still time to act to limit the amount of change and the extent of damaging impacts." (U.S. Global Change Research Program, 2014). The United States Environmental Protection Agency (EPA) states that, "Greenhouse gas (GHG) pollution threatens the American public's health and welfare by contributing to longlasting changes in our climate that can have a range of negative effects on human health and the environment." (EPA, 2014a)

12.1.2 Greenhouse Gases

Gases that trap heat in the atmosphere are often called GHGs. Common GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and certain fluorinated gases. Other gases such as water and ozone are also GHGs, although are of less importance, because, for example, the atmospheric lifetime of water vapor is very short as compared to CO_2, and as such human caused impacts to water vapor concentration are of minor consequence.

Different GHGs have varying climate change impacts. The most commonly accepted metric for the radiative forcing (heat trapping) impact of GHGs is the global warming potential (GWP), which is a ratio intended to quantify the mass of CO_2 that would produce the same impacts over 100 years as one unit mass of the GHG. Most current regulatory and voluntary reporting programs in the United States currently use GWP estimates from the IPCC Fourth Assessment Report (AR4), although some may still use older estimates from the IPCC Second Assessment Report (SAR).

As an example, per IPCC AR4, the GWP of CH_4 is 25. By definition, the GWP of CO_2 is 1. N_2O and the fluorinated gases have much higher GWPs.

Emissions of individual and total gases are reported as a carbon dioxide equivalent (CO_2e) in order to provide a metric for total climate change impact. For example, the emissions of 1 ton of CH_4 and 1 ton of CO_2 would total 26 tons of CO_2e.

GHGs are emitted by both natural processes and human activities. Of the common GHGs, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely byproducts of fossil fuel combustion, whereas CH_4 results from offgassing associated with agricultural practices and the decomposition of organic materials within landfills. Fluorinated gases, such as hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6), are byproducts of certain industrial processes.

GHGs in the atmosphere regulate the earth's temperature. Without the natural heat trapping effect of GHGs, the earth's surface would be about 34 degrees Celsius (°C) cooler (CAT, 2006). However, it is known that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of GHGs in the atmosphere beyond the level of naturally occurring concentrations.

The following paragraphs provide information on the primary GHGs in more detail.

Carbon Dioxide. The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). Solid waste landfills are a form of carbon sink. When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (EPA, 2013d). CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th Century. As noted above, CO_2 has a GWP of one. Concentrations of CO_2 in the atmosphere have risen approximately 35 percent since the Industrial Revolution. According to the IPCC (2007), the global atmospheric concentration of CO_2 has increased from a pre-industrial value of approximately 280 parts per million (ppm) to 379 ppm in 2005. By 2011, concentrations increased to 391 ppm (IPCC, 2013).

Methane. CH_4 is an extremely effective absorber of radiation, though its atmospheric concentration is less than CO_2, and its lifetime in the atmosphere is brief (10 to 12 years) compared to some other GHGs. Based on a number of factors, scientific assessments of the climate impact of methane have increased with time. The IPCC SAR estimated the GWP of CH_4 as 21 and, as noted above, the IPCC AR4 estimates it at 25. The IPCC AR5 indicates a current understanding that the GWP may be substantially higher (IPCC, 2013), although few if any reporting organizations have adopted the higher estimates yet. Methane concentrations have increased by an estimated 150 percent since pre-industrial times (IPCC, 2013). Anthropogenic sources of CH_4 include natural gas and petroleum systems, agricultural activities, coal mining, wastewater treatment, stationary and mobile combustion, landfills, and certain industrial processes (EPA, 2013d).

Nitrous Oxide. Concentrations of N_2O also began to rise at the beginning of the industrial revolution. N_2O is produced by microbial processes in soil and water, including reactions that occur in fertilizers containing nitrogen, as well as a number of industrial processes and other sources. Concentrations of N_2O are estimated to exceed pre-industrial levels by 20 percent (IPCC, 2013). The AR4 estimate of GWP for N_2O is 298.

Fluorinated Gases (HFCS, PFCS, and SF_6). Fluorinated gases, such as HFCs, PFCs, and SF_6, are powerful GHGs that are emitted from a variety of industrial processes. Some fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC), and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and are being phased out under the *Montreal Protocol* and Clean Air Act Amendments of 1990. Some are used for other industrial processes, and SF_6 is used in high voltage electrical equipment. Fluorinated gases are typically emitted in smaller quantities than CO_2, CH_4, and N_2O, but each molecule can have a much greater global warming effect. AR4 estimates the GWP of SF_6 to be 22,800.

12.1.3 Global and National Greenhouse Gas Emissions

From 1750 to 2011, CO_2 emissions from fossil fuel combustion and cement production have released 365 gigatonnes of carbon (GtC) (1,340,000 million metric tons [MMT] CO_2) to the atmosphere, while deforestation and other land use change are estimated to have released 180 GtC (661,000 MMT CO_2). This results in cumulative anthropogenic emissions of 545 GtC (2,000,000 MMT CO_2) (IPCC, 2013).

Total United States GHG emissions in 2011 were estimated to be 6,702 MMT CO_2e (EPA, 2013d). Overall, total United States GHG emissions have risen by 8.4 percent from 1990 to 2011, but GHG emissions decreased from 2010 to 2011 by 1.6 percent (108.0 MMT CO_2e). The decrease from 2010 to 2011 was driven by a decrease in the carbon intensity of fuels consumed to generate electricity due to a decrease in coal consumption, with increased natural gas combustion and a significant increase in hydropower used. Since 1990, United States GHG emissions have increased at an average annual rate of 0.4 percent (EPA, 2013d). As of 2011, the primary GHG emitted by human activities in the United States was CO_2, representing approximately 83.7 percent of total GHG emissions in terms of CO_2e (EPA, 2013d). The largest source of CO_2, and of overall GHG emissions, was fossil fuel combustion. CH_4 emissions, which have declined from 1990 levels, resulted primarily from enteric fermentation associated with domestic livestock, decomposition of wastes in landfills, and natural gas systems. Agricultural soil management, stationary combustion, and mobile source fossil fuel combustion were the major sources of N_2O emissions. The emissions of substitutes for ozone-depleting substances and the production of HCFC-22 were the primary contributors to aggregate HFC emissions. Electrical transmission and distribution systems accounted for most SF_6 emissions, while PFC emissions resulted from semiconductor manufacturing and as a byproduct of primary aluminum production. Landfill emissions account for a small fraction of all GHGs emitted.

Residential and commercial end-use sectors accounted for 21 percent and 18 percent, respectively, of CO_2 emissions from fossil fuel combustion in 2011 (EPA, 2013d). Both sectors relied heavily on electricity for meeting energy demands, with 71 percent and 77 percent, respectively, of their emissions attributable to electricity consumption for lighting, heating, cooling, and operating appliances. The remaining emissions were due to the consumption of natural gas and petroleum for heating and cooking. Emissions from these end-use sectors have increased 21 and 27 percent, respectively, since 1990 due to increasing electricity consumption for lighting, heating, air conditioning, and operating appliances (EPA, 2013d).

California is a substantial contributor of global GHGs –the second largest contributor in the United States and the 14th largest contributor in the world in 2007 [California Air Resources Board (CARB), 2011a]. In 2009, California released a total of 457 MMT CO_2e, which equaled approximately 7 percent of the United States total. The primary source of GHGs in California is transportation, contributing 37.9 percent of the state's total GHG emissions. Electricity generation is the second largest source, contributing 22.9 percent of the state's GHG emissions (CARB, 2011a). Eighty-six percent of California's 2009 GHG emissions (in terms of CO_2e) were from CO_2, 7.0 percent were from CH_4, and 3.3 percent were from N_2O (CARB, 2011a). California mass emissions are relatively high due in part to the state's large size and large population. By contrast, in 2009, California had the 5th lowest CO_2 emissions per capita from fossil fuel combustion in the country (CARB, 2011a). A factor that has reduced California's per capita fuel use and GHG emissions is its mild climate compared to that of many other states.

12.1.4 Effects of Global Climate Change

GCC has the potential to affect numerous environmental resources through potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st Century than were observed during the 20th Century. The global mean surface temperature change for the period 2016–2035 relative to 1986–2005 will likely be in the range of 0.3°C to 0.7°C (IPCC, 2013). According to CARB, some of the potential global warming impacts in California may include loss in snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CARB, 2004). Below is a summary of some of the potential effects, reported by an array of studies, which could be experienced in California as a result of GCC.

The connection between climate change and anthropogenic GHGs, and the types of impacts that will result are known with a high level of certainty. However, our ability to predict and quantify the new extremes of climate-related variables, and procedures for "downscale" modeling to estimate localized impacts, is still evolving. Thus the following discussion reviews the types of impacts considered possible.

Air Quality. Higher temperatures are conducive to some types of air pollution formation, and could potentially worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. The effect of higher temperatures will also vary depending on whether it is accompanied by drier or wetter conditions. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. If higher temperatures are accompanied by wetter conditions, however, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires.

Water Supply. Uncertainty remains with respect to the overall impact of GCC on future water supplies in California. Studies have found that, "[c]onsiderable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change" [California Department of Water Resources (DWR), 2006]. For example, some studies identify little change in total annual precipitation in projections for California [California Climate Change Center (CCCC), 2006]. Other studies show significantly more precipitation (DWR, 2006). Even if an increase in precipitation were to occur, analysis of the impact of climate change is further complicated by the fact that no studies have identified or quantified the runoff impacts such an increase in precipitation would have in particular watersheds (CCCC, 2006).

The DWR (2006) report on climate change and its effects on the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta, concludes that, "[c]limate change will likely have a significant effect on California's future water resources... [and] future water demand." It also reports that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain" (DWR, 2006).

This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood (DWR, 2006). DWR adds that, "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future."

Hydrology. As discussed above, climate changes could potentially affect the amount of snowfall, rainfall, and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide, and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes: expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion.

Agriculture. California has a $30 billion agricultural industry that produces half the country's fruits and vegetables. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality (CCCC, 2006).

While the above-mentioned potential impacts identify the possible effects of climate change at a global and potentially statewide level, in general the currently available technology and scientific modeling tools are unable to predict what, if any, impacts would occur locally.

12.2 Methodology

This section summarizes the methodology and assumptions used to calculate the GHG emissions associated with the Proposed Project. GHG emissions are expected from construction activities, including mobile combustion, and operation activities, including mobile combustion, stationary combustion, waste decomposition, and consumption of purchased electricity. GHG emission calculations and associated assumptions are included in Appendix H.

12.2.1 Emission Calculation Methodology

12.2.1.1 Construction Emissions

Short-term emissions of GHGs would be generated from construction activities including site preparation, road construction, foundation construction, and excavation. During onsite construction, activities are assumed to occur for 5 days per week, or 20 days per month.

The Proposed Project would include best management practices (BMP), required by state and local regulations, to reduce air pollutant emissions during construction; some BMPs will also reduce GHGs. Therefore, the following emission reductions were included in the unmitigated construction GHG emissions to account for implementation of BMPs:

- Equipment and vehicle idling time would be minimized.
- Equipment and vehicles would be maintained according to manufacturer's written emission-related instructions.

Construction Exhaust Emissions

CO_2 emissions from construction equipment exhaust were estimated using South Coast Air Quality Management District (SCAQMD) OFFROAD 2007 emission factors. Though CARB has released an updated version of the OFFROAD model, OFFROAD 2011, it was not used for this analysis as it provides inventory level emissions rather than equipment-specific emission factors. The construction equipment exhaust emissions, as well as emissions from trucks used for routine maintenance activities, were considered onsite emission sources, while worker commutes were considered offsite emission sources. CO_2 and CH_4 emissions from on-road vehicle exhaust emissions were estimated using EMFAC2011 average emission factors for the SCAQMD. It was assumed that maintenance trucks would travel 5 miles per day onsite and that each employee would commute a distance of 40 miles roundtrip per day. Detailed vehicle exhaust emission calculations are included in Appendix H.

12.2.1.2 Operational Emissions

GHGs would be generated over the long term from operation of the Proposed Project. Operational emissions would include routine landfill maintenance activities, worker commute trips, haul truck trips, fugitive landfill gas (LFG), LFG flares operated onsite, and electricity used to power onsite support facilities. Onsite and offsite GHG operation emissions were divided into four categories: vehicle exhaust, stationary source exhaust, fugitive LFG, and consumption of purchased electricity. Operations at the landfill are assumed to occur 6 days per week, for a total of 312 days per year.

The Proposed Project would include BMPs, required by state and local regulations, to reduce emissions during operation. Therefore, the following emission reductions were included in the unmitigated operation GHG emissions to account for implementation of BMPs:

- Equipment and vehicle idling time would be minimized.
- Equipment and vehicles would be maintained according to manufacturer's written emission-related instructions.

Mobile Source Exhaust Emissions

CO_2 emissions from off-road diesel equipment exhaust were estimated using SCAQMD OFFROAD 2007 emission factors. Though CARB has released an updated version of the OFFROAD model, OFFROAD 2011, it was not used for this analysis as it provides inventory level emissions rather than equipment-specific emission factors. CO_2 and CH_4 emissions from on-road vehicle exhaust were estimated using EMFAC2011 average emission factors for the SCAQMD. Trucks used for routine maintenance activities were considered onsite emission sources while worker commutes were considered offsite emission sources. Waste trucks travel both onsite and offsite. It was assumed that service trucks would travel 5 miles per day onsite, that waste trucks would travel 6 miles per day offsite and 4 miles per day onsite with an idling time of 3.5 minutes, and

that each of the 25 onsite employees would commute a distance of 40 miles roundtrip per day. Detailed vehicle exhaust emission calculations are included in Appendix H.

Stationary Source Exhaust Emissions

CCL currently operates two onsite LFG flares. As part of the Proposed Project, two additional flares will be installed; the first in 2021 and the second in 2030. CO_2 emissions from the Proposed Project flares were estimated based on an emission factor taken from The Climate Registry's (TCR) General Reporting Protocol (TCR, 2014). Facility data indicate that, on average, 85 percent of LFG generated is recovered and combusted in the flares or existing onsite landfill gas-to-energy (LFGTE) plant. While the majority of the LFG collected is expected to go to the LFGTE plant instead of the flares, emissions from combustion of LFG in the flares would be higher. Therefore, it was conservatively assumed that 85 percent of future LFG generated would be combusted by the flares. A flare destruction efficiency of 99 percent was assumed, as required by CARB (17 CCR 95464[b][2][A][1]). Detailed stationary source exhaust emission calculations are included in Appendix H.

Calculations of stationary source emissions assuming all gas is burned in the flares are conservative. While a significant fraction of the gas will be burned for beneficial use in the LFGTE plant, combustion efficiency in the gas turbines would significantly exceed the 99 percent required for flares. Therefore, because combustion in the turbine would result in less unburned methane than estimated for the flares, the overall GHG impact must be less than estimated here.

Fugitive Landfill Gas Emissions

Fugitive LFG emissions would result from the aerobic decomposition of organic waste and the anaerobic bacterial digestion of buried waste. Facility data indicate that, on average, 85 percent of LFG generated is combusted in the flares, therefore 15 percent of LFG generated would be emitted as fugitive CO_2 and CH_4. Detailed fugitive LFG emission calculations are included in Appendix H.

Note that the CO_2 released either as fugitive emissions, or from the capture and combustion of landfill gas, is considered biogenic because it results from the decomposition of biologically-based material. Biogenic CO_2 is commonly accepted to be of negligible or "net zero" climate impact, since it results from carbon recently removed from the atmosphere by biologic activity, as compared to the carbon in fossil fuels which has been stored in geologic formations for thousands of years. Nonetheless, in accordance with SCAQMD procedures, biogenic CO_2 is included in the significance determinations for the proposed project.

Emissions from Consumption of Purchased Electricity

Operation of the Proposed Project would require the use of electricity generated by the onsite LFGTE plant, offsite power plants and other electricity generating facilities. It is expected that the LFGTE plant would generate the majority of the electricity needed for operation, however emissions from power generated offsite would be higher, therefore calculations were performed assuming all power used would be generated offsite. Indirect GHG emissions associated with electricity generation were calculated using emission factors from EPA eGRID Ninth Edition, Version 1.0 (2010 data) for the Western Electricity Coordinating Council California subregion (EPA, 2014b). Future emission factors are not available; therefore, the latest available emission factors were used to calculate emissions for all years of operation.

Increased electricity use associated with the Proposed Project would include electricity used to power new blowers. Electricity usage per year is based on the number of new blowers in operation, motor hp, assumed motor efficiency of 90 percent, and the assumption that the blowers would operate 24 hour per day, 365 days per year. Electricity used to power landfill facilities, including offices, scale house, scales, and site lighting is not expected to increase due to operation of the Proposed Project, therefore emissions were not calculated for those sources.

12.3 Regulatory Setting

The federal and state governments have been empowered by legislation and regulation including the Clean Air Act to regulate the emission of airborne pollutants. With a series of actions including the Massachusetts vs. EPA decision in the Supreme Court, the Endangerment Determination, Light Duty Vehicle Rule, and Tailoring Rule, GHGs are now subject to regulation under the federal Clean Air Act. AB32 also established the requirement to manage GHGs in California and has resulted in a series of regulatory programs. EPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent in California. Local control in air quality management is provided by CARB through county-level or regional (multi-county) air quality management districts (AQMD) and air pollution control districts (APCD). CARB establishes air quality standards and is responsible for control of mobile emission sources, while the local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 14 air basins statewide.

12.3.1 Federal Regulations and Standards

12.3.1.1 Clean Air Plan

The Clean Air Plan (CAP) addresses state and federal Clean Air Act mandates, including all federal planning requirements for “maintenance” areas. State and federal planning requirements include developing control strategies, attainment demonstrations, reasonable further progress, and maintenance plans. The 2012 CAP incorporates the latest scientific and technical information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and latest growth forecasts from Southern California Association of Governments (SCAG).

12.3.1.2 Climate Change Regulations

The following regulations address both GCC and GHG emissions.

GHG emissions are covered by the Prevention of Significant Deterioration (PSD) and Title V operating permit programs as of January 2, 2011. These permitting programs are required under the Clean Air Act. However, the thresholds established in the Clean Air Act for determining applicability of the PSD and Title V programs (100 and 250 tons per year, respectively) were not logical for regulation of GHGs. Therefore, an approach to permitting GHG emissions under PSD and Title V was established under EPA’s GHG Tailoring Rule, issued in May 2010.

The GHG Tailoring Rule set initial emission thresholds, known as Steps 1 and 2 of the Tailoring Rule, for PSD and Title V permitting based on CO_2e emissions. New facilities with GHG emissions of at least 100,000 short tons per year (tpy) CO_2e and existing facilities with at least 100,000 short tpy CO_2emaking changes that would increase GHG emissions by at least 75,000 short tpy CO_2e are required to obtain PSD permits for GHGs and all other criteria pollutants over PSD significance levels. New and existing sources with GHG emissions above 100,000 short typ CO_2e must also obtain Title V operating permits.

Step 3 of the GHG Tailoring Rule, issued on June 29, 2012, continues to focus GHG permitting on the largest emitters by retaining the permitting thresholds that were established in Steps 1 and 2. In addition, Step 3 improves the usefulness of plant-wide applicability limitations (PAL) by allowing GHG PALs to be established on CO_2e emissions, in addition to the already available PALs for mass emissions, and to use the CO_2e-based applicability thresholds for GHGs provided in the “subject to regulation” definition in setting the PAL on a CO_2e basis. Step 3 also revises the PAL regulations to allow a source that emits or has the potential to emit at least 100,000 tpy of CO_2e, but that has minor source emissions of all other regulated New Source Review pollutants, to apply for a GHG PAL while still maintaining its minor source status (EPA, 2013e).

Via the Fiscal Year 2008 Consolidated Appropriations Act (H.R. 2764, Public Law 110-161), EPA issued the Greenhouse Gas Mandatory Reporting Rule (MRR) (74 *Federal Register* [FR] 56260) on October 30, 2009. The MRR applies to fossil fuel and industrial gas suppliers, direct GHG emitters, and manufacturers of heavy duty and off-road vehicles and engines. The MRR requires that sources above certain threshold levels monitor and

report GHG emissions, but does not require control or mitigation of GHG emissions. The Proposed Project will be subject to the MRR.

12.3.2 State Regulations and Standards

California Regulations. Assembly Bill (AB) 1493, requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light duty trucks, and other vehicles used primarily for personal transportation in the state was signed into law in September 2002 by Governor Davis. Governor Schwarzenegger issued Executive Order S-3-05 in 2005, which established statewide GHG emissions reduction targets. Executive Order S-3-05 provides that GHG emissions shall be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent of 1990 levels by 2050 (CAT, 2006).

In response to Executive Order S-3-05, the CalEPA created the CAT, which, in March 2006, published the *Climate Action Team Report* (the "2006 CAT Report"). The 2006 CAT Report identifies a recommended list of strategies that the state could pursue to reduce GHG emissions. These strategies could be implemented by various state agencies, within their existing authority, to ensure that the governor's targets are met. The strategies include, but are not limited to: reduction of passenger and light duty truck emissions, reduction of idling times for diesel trucks, overhaul of shipping technology and infrastructure, increased use of alternative fuels, increased recycling, and increased landfill CH_4 capture.

AB 32, the "California Global Warming Solutions Act of 2006," was signed into law in the fall of 2006. AB 32 established the goal of reducing GHG emissions to 427 MMT CO_2e per year by 2020. When signed, AB 32 directed CARB to begin developing discrete early actions to reduce GHG emissions while also preparing a scoping plan to identify how to reach the 2020 emissions cap. Major milestones of AB 32 are outlined below:

- By January 1, 2009, CARB adopted a plan indicating how emission reductions would be achieved from significant sources of GHG via regulations, market mechanisms (most notably, the Cap-and-Trade program), and other actions.
- During 2009, CARB staff drafted rule language to implement its plan and held a series of public workshops on each measure (including market mechanisms).
- On January 1, 2010, early action measures took effect.
- During 2010, CARB conducted a series of rulemakings to adopt GHG regulations, including rules governing market mechanisms.
- In January 2011, CARB completed major rulemakings for reducing GHG emissions, including market mechanisms.
- In January 2012, GHG rules and market mechanisms were adopted by CARB and became legally enforceable.
- On November 14, 2012, the first auction of GHG allowances was held.
- On January 1, 2013, enforceable compliance obligations under the Cap-and-Trade program began for Phase 1 covered sectors.

The Cap-and-Trade program is an element of AB 32 that covers major sources of GHG emissions in California, including power plants, industrial facilities, and transportation of fuels. The Cap-and-Trade Regulation (17 CCR 95801-96022) includes an enforceable GHG cap that declines over time. Each quarter, CARB auctions allowances, which are tradable permits, equal to the emission allowed under the cap. The Proposed Project would not be subject to the Cap-and-Trade regulation as emissions from biomethane and biogas produced by landfills do not have a compliance obligation (17 CCR 95852.2[a][8][B]).

As part of AB 32, GHG emissions reporting is required for industrial facilities; suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and CO_2; operators of petroleum and natural gas systems; and electricity retail providers and marketers. The California GHG mandatory reporting rule was

originally approved in 2007 and revised in 2010, 2012, and 2013. The current regulation became effective January 1, 2014. The Proposed Project is subject to the California GHG mandatory reporting rule.

The Landfill Methane Control Measure regulation, a discrete early action GHG reduction measure as described in AB 32, became effective in June 2010. The regulation is designed to reduce methane emissions from Municipal Solid Waste (MSW) landfills and differs from federal regulations and local air district rules in that the focus is generally on methane rather than on non-methane organic compounds (NMOCs), it applies to smaller landfills (in addition to larger landfills), and has more stringent requirements for methane collection and control, component leak testing, and surface emissions monitoring.

The regulations for MSW landfills require the installation and proper operation of an LFG collection and control system if the landfill is active, inactive, or closed and has a minimum of 450,000 tons of waste-in-place, if it received waste after January 1, 1977, if the landfill gas is currently uncontrolled, and the landfill gas heat input capacity is greater than 3.0 MMBtu/hr. If a landfill can demonstrate that the landfill gas heat input capacity is less than 3.0 MMBtu/hr then it may be exempt. The ARB has a simple modeling tool on their website for calculating the heat capacity (http://www.arb.ca.gov/cc/landfills/landfills.htm).

However, landfill owners or operators with existing gas collection and control systems are not required to submit plans or install new collection and control systems. If required, a control system must be in place within 18 months of approval of the design and it must achieve 99 percent reduction of methane for most control devices (i.e. flares). The 99 percent destruction efficiency does not apply to lean burn internal combustion engines. They must reduce the outlet methane concentration to less than 3,000 ppmv.

Ongoing monitoring requirements exist to ensure the collection and control system is maintained and operated in a manner to minimize methane emissions. Surface emission monitoring must be performed quarterly to make sure methane emissions are adequately controlled. Instantaneous and integrated (averaged) surface methane concentrations must not exceed 500 ppmv and 25 ppmv, respectively. Under certain conditions, surface monitoring may be performed on an annual basis. In addition, the combustion temperature of the enclosed combustion device (i.e., flare) must be equipped with a continuous monitor.

Executive Order S-01-07 was enacted by Governor Schwarzenegger on January 18, 2007. The order mandated that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The Low Carbon Fuel Standard (LCFS) regulations were finalized on February 1, 2010 and amended in December 2011. An enforcement injunction was placed on the LCFS in December 2011, but it was lifted April 24, 2012. As such, the LCFS regulations are currently in effect.

Senate Bill (SB) 97, signed in August 2007, acknowledged that climate change is an important environmental issue that requires analysis under CEQA. This bill directed the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions by July 1, 2009.

In response to SB 97, OPR submitted its recommended amendments to the *CEQA Guidelines* for addressing GHG emissions to the Secretary for Natural Resources on April 13, 2009. Those recommended amendments were developed to provide guidance to public agencies regarding the analysis and mitigation of GHG emissions and the effects of GHG emissions in draft CEQA documents. The amendments were adopted by the Natural Resources Agency on December 30, 2009, and became effective on March 18, 2010.

SB 375, signed in August 2008, required the inclusion of sustainable communities' strategies in regional transportation plans for the purpose of reducing GHG emissions. The bill required CARB to appoint a Regional Targets Advisory Committee by January 31, 2008, and required this committee to recommend factors to be considered and methodologies to be used for setting GHG reduction targets by December 31, 2009. Final reduction targets were established in February 2011. Santa Clarita is incorporated in the SCAG reduction targets set at an 8 percent reduction of GHG emissions relative to 2005 by 2020, and a 13 percent reduction relative to 2005 by 2035.

CEQA Requirements. GHG emissions contributing to GCC have only more recently been addressed in CEQA documents, such that CEQA and case law do not provide any time-tested guidance relative to their assessment. On October 24, 2008, CARB released a preliminary draft staff proposal titled "Recommended Approaches for Setting Interim Significance thresholds for GHGs under CEQA." This document proposed a significance threshold of 7,000 metric tons of CO_2e per year ($MTCO_2e/yr$) for industrial projects. Projects exceeding this threshold are presumed to have significant impacts related to climate change and must prepare an EIR and implement all feasible mitigation. Impacts associated with the Proposed Project are discussed in Section 12.6, and mitigation measures are discussed in Section 12.7.

As previously discussed, amendments to the *CEQA Guidelines* for addressing GHG emissions were adopted on December 30, 2009, and became effective on March 18, 2010. The amended guidelines do not establish quantitative thresholds but instead provide qualitative thresholds for comparison. Similarly, the California Air Pollution Control Officers Association (CAPCOA) issued a white paper, titled *CEQA and Climate Change*, to assess GHG emissions in January 2008. CAPCOA has not made any recommendations for use of any specific methodology in its white paper (CAPCOA, 2008). CAPCOA later released a report titled *Quantifying GHG Mitigation Measures*, to provide a common platform of information and tools to support local governments in August 2010. This report does not provide policy guidance or advocate any policy position related to GHG emission reduction (CAPCOA, 2010).

CARB Interim Significance Thresholds for GHGs under CEQA. In order to provide guidance to local lead agencies on determining the significance of GHG emissions identified in CEQA documents, the CARB staff have recommended a threshold for new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. If a project exceeds this threshold, then it is considered significant and must implement all feasible mitigation. The project must also meet CARB interim performance standards for construction and transportation emissions. In addition, projects should comply with AB 32 GHG reduction goals, include emissions estimates agreed upon by CARB, have been analyzed under CEQA, and have a certified Final CEQA document. Impacts and mitigation measures associated with the Proposed Project are discussed in Sections 12.6 and 12.7, respectively.

City of Santa Clarita CAP. There is no adopted GHG Reduction Plan or applicable strategy for the County of Los Angeles at the present time. However, the City of Santa Clarita adopted a CAP in August 2012. Section 4.2 of the CAP identifies GHG mitigation measures relating to solid waste diversion, energy usage, transportation, water, and vegetation. The solid waste diversion measures are aimed to limit the amount of waste sent to landfills, and are not applicable to the construction and operation of landfills. None of the mitigation measures presented in the CAP are directly applicable to the Proposed Project; however they do include many of the interim performance standards developed by CARB.

SCAQMD Landfill Rule. The purpose of SCAQMD Rule 1150.1 is to reduce emissions from MSW landfills. The rule incorporates and clarifies many federal landfill emission regulations (40 CFR) and California regulations (AB 32). The rule requires that an LFG collection and control system reduce CH_4 emissions by 99 percent and NMOC emissions by 98 percent or reduce outlet NMOC concentration from to less than 20 ppm. It also includes requirements for flares and LFG collection systems, as well as sampling and monitoring requirements for landfills.

12.4 Regional Setting

CCL is located in the northwestern portion of unincorporated Los Angeles County. CCL is approximately 3 miles west of the intersection of Interstate 5 (I-5) and State Route 126 (SR-126). The site is located in Section 15, Township 4 North, Range 17 West, San Bernardino Baseline and Meridian. The site latitude and longitude are 34°25'N and 118°39'W, respectively. The landfill is located within a series of canyons that make up the current and future cells containing disposed waste. These canyons are oriented in a north-northeast to south-southwest manner and broaden to form the Santa Clarita River floodplain along the south. CCL is located within the planning area of the City of Santa Clarita, but is outside its city limits and sphere of influence. The

landfill site is also located in the Santa Clarita Valley Area Plan (Area Plan) of the Los Angeles County General Plan and in the Castaic Area Community Standards District.

12.5 Existing Operational Project Setting

CCL actively receives waste at a roughly 200-foot by 300-foot working face within the site. Daily operations at the existing landfill consist of typical waste disposal activities and facilities that contribute GHG emissions to the ambient air in the air basin. The operation of landfills and the associated emission rates are unique in comparison to land development projects because landfill operations require the regular use of heavy duty construction equipment and collection vehicles, long-term exposure of non-vegetated soil layers, constant movement of soil and refuse, and proper onsite disposal of LFG. An LFG collection system has been installed in both closed and active landfill areas, and a 9.2-megawatt LFGTE plant and flare stations have been added to combust the collected gases. Air emissions from landfill operations are associated with fugitive LFG emissions, operation of the flare stations and LFGTE plant, construction vehicles and waste transfer trucks at refuse fill areas, construction of additional modules for waste receiving, and closure of modules that have reached capacity.

12.5.1 Landfill Gas Surface Emissions

As part of landfill operation, gas wells and pipelines are installed to capture the LFG generated by the decaying solid waste. Initially, the LFG is mostly CO_2. As the buried waste ages, the available oxygen decreases and anaerobic conditions are created, producing CH_4, a powerful GHG.

The collected gas is monitored to be sure that the collection system is collecting LFG without drawing in ambient air. The collected gas is combusted in either the LFGTE plant or a flare, which converts CH_4 into CO_2. Two LFG flares, each with a capacity of 4,000 standard cubic feet per minute, are currently in operation.

The gas wells and pipelines collect an average of 85 percent of the LFG produced, and about 15 percent of the gas generated in the landfill escapes as fugitive emissions. Several actions are taken to minimize these emissions:

- Gauge pressure is negative at the gas extraction well.
- Nitrogen and oxygen concentrations are monitored to minimize excess air infiltration.
- LFG temperatures at the gas extraction wells are monitored to limit the potential for subsurface fires.
- CH_4 concentrations across the entire landfill surface are monitored to prevent seeping of CH_4 gas from the landfill surface.

In addition to the emission sources described above, CCL has an equipment maintenance facility. Additionally, CCL intends to resume a composting operation, previously active from 1997 to 2009, in some manner in the future.

12.5.2 Mobile Source Emissions

Mobile tailpipe exhaust emissions are generated during operation of the landfill by the following activities:

- Onsite service trucks and heavy equipment
- Collection trucks, transfer trucks, and passenger vehicles that deliver various waste materials
- Passenger vehicles associated with landfill employee commuting

12.6 Potential Impacts

12.6.1 California Environmental Quality Act Guidelines

In response to SB 375, the *CEQA Guidelines* have been amended to address establishment of thresholds of significance for analysis of the potential GHG impacts of a project. The relevant portions of the *CEQA Guideline*s are excerpted below.

CEQA Guideline 15064 (h)(3). A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, and plans or regulations for the reduction of GHG emissions) which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, or integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency.

When relying on a plan**,** regulation or program, the lead agency should explain how implementing the particular requirements in the plan**,** regulation, or program ensure that the project's incremental contribution to the cumulative effect is not cumulatively considerable.

If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding that the project complies with the specified plan or mitigation program addressing the cumulative problem, an EIR must be prepared for the project.

CEQA Guideline 15064.4 (a). The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. Use a model or methodology to quantify GHG emissions resulting from a project. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or
2. Rely on a qualitative analysis or performance based standards.

CEQA Guideline 15064.4 (b). A lead agency may consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

12.6.2 Thresholds of Significance for the Proposed Project

The *CEQA Guidelines* present two specific questions regarding GHG emissions. The questions are listed in Table 12-1.

TABLE 12-1
California Environmental Quality Act Checklist for Greenhouse Gas Emissions

VII. GREENHOUSE GAS EMISSIONS Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less-than-Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☐

As stated in Section 12.3.2, CARB has established an interim, quantitative GHG emission significance threshold for stationary source, industrial projects where local planning agencies have not adopted specific CEQA GHG guidelines. The threshold is set at 7,000 $MTCO_2e$/yr for operations emissions excluding construction and transportation emissions. The Proposed Project is subject to this threshold; therefore, impacts associated with the Proposed Project will be deemed significant if GHG emissions exceed 7,000 $MTCO_2e$/yr. In addition, the impacts associated with the Proposed Project will be considered significant if GHG emissions hinder or delay California's ability to meet the reduction targets contained in AB 32.

To determine compliance with the two *CEQA Guidelines* questions, the operational GHG emissions of the Proposed Project will be compared to CARB's 7,000-$MTCO_2e$/yr significance threshold. If the CARB threshold is not exceeded, then significance would be determined by whether the project would significantly hinder or delay California's ability to meet the reduction targets contained in AB 32 through GHGs emitted during either construction or operation.

Calculations of projected CO_2, CH_4, and N_2O emissions are provided in the following section to identify the magnitude of potential effects of the Proposed Project. The analysis focuses on CO_2, CH_4, and N_2O as these are the GHG emissions that the Proposed Project would emit in the largest quantities compared to other GHGs (such as HFCs and PFCs).

12.6.3 Proposed Project Impacts

Potential GHG emissions from the Proposed Project implementation are described below.

12.6.3.1 Construction Emissions

Impact GHG-1: *Implementation of the Proposed Project would generate construction-related GHG emissions. However, these emissions are not included in the 7,000-$MTCO_2e$/yr threshold and would not hinder or delay California's ability to meet the reduction targets contained in AB 32. The construction equipment and work practices would meet or exceed the CARB interim performance standards for construction. Impacts from construction activities would therefore not be significant.*

Project Impact Discussion. The Proposed Project will be developed in phases with cell development in each phase, occurring over the life of the Proposed Project. Grading and site preparation associated with each subsequent phase of the Proposed Project would occur prior to the fill of the previous cell. Emissions from these activities are temporary. Preparation of new cells would occur as needed, and construction emissions from preparation of each new cell would be generally similar.

The Proposed Project would emit GHGs primarily from direct sources (combustion of fuels from employee vehicles and construction equipment). Emissions from the combustion of fuel from construction equipment

and associated employee vehicles were estimated per the methodology described in Section 12.2. GHG emissions during construction would equal approximately 2,961 tons (2,687 metric tons) per year of CO_2e. Table 12-2 shows the estimated construction-related emissions.

TABLE 12-2
Total Estimated Landfill Construction Greenhouse Gas Emissions (tons per year)[a,b]

Type of Emissions[c]	CO_2	CH_4	N_2O	CO_2e
Onsite Construction Equipment (exhaust)	2,896	0[d]	N/A	2,900
Offsite Construction Mobile Sources (cars/trucks)	60	0[d]	N/A	60
Onsite Construction Mobile Sources (cars/trucks)	1	0[d]	N/A	1
Total Landfill Construction Emissions	**2,957**	**0[d]**	**N/A**	**2,961 (2,687 $MTCO_2e$/yr)**

[a] Emission estimates from analysis of operational year 2021, which is the year resulting in the greatest amount of construction-related CO_2e emissions.

[b] Unless otherwise specified, all values presented in tons per year, rounded to the nearest ton.

[c] See Appendix H for GHG calculations and assumptions.

[d] Below 0.5 tons per year

Note:

N/A = not applicable or emission factor not available

As shown in Table 12-2, the estimated GHG emissions from construction activities is 2,687 $MTCO_2e$/yr. The CARB significance threshold does not include construction emissions. Therefore, this assessment examines significance in the specific context of whether or not the Proposed Project would hinder or delay California's ability to meet the reduction targets contained in AB 32. As proposed, initial construction of the Proposed Project would occur prior to the year 2020 and would not hinder or delay the implementation of AB 32. Although construction emissions prior to 2020 would affect background GHG concentrations, AB 32 only assesses emissions (rather than concentrations) beginning in the year 2020. As such, no mitigation measures are required, and the impact of the construction of the Proposed Project would be less than significant.

Additional Mitigation Measures Required Through the CEQA Process. CARB interim performance standards for construction are required and included in the Proposed Project, including the use of limits on idling.

Effectiveness of Mitigation Measures. Impacts would be less than significant by incorporation of the CARB interim performance standards.

12.6.3.2 Operational Emissions

Impact GHG-2: *Operation of the Proposed Project would result in the generation of GHG emissions from energy use, onsite equipment exhaust, fugitive emissions of LFG, combustion of LFG, and disposal truck/worker vehicle trips. Based on the detailed analysis herein, the GHG emissions from the Proposed Project, excluding construction and transportation emissions, would exceed the 7,000-$MTCO_2e$/yr significance threshold. Therefore, GHG emissions resulting from the operation of the Proposed Project would be significant.*

Project Impact Discussion. Operational, or long-term, GHG emissions will occur over the life of the Proposed Project. The sources of operational emissions include energy use, onsite equipment exhaust, LFG generation and flaring, and disposal vehicle and other transportation emissions. Each of these emissions sources are discussed in greater detail below.

In accordance with CARB interim thresholds for GHG emissions, the equipment exhaust will not be included in the evaluation of the operational emissions impact. The Proposed Project incorporates the CARB interim performance standards for construction and transportation.

Onsite Energy Use. Operational emissions of CO_2, CH_4, and N_2O associated with onsite energy use by new blowers were quantified per the methodology described in Section 12.2. Detailed indirect electricity emission calculations are included in Appendix H.

The generation of electricity through combustion of fossil fuels yields CO_2, as well as lesser amounts of CH_4 and N_2O. These emissions are considered indirect because the Proposed Project would not generate the electricity but merely consume purchased electricity that is generated elsewhere. Table 12-3 shows the estimated operational emissions of GHGs associated with electricity consumption from the Proposed Project.

TABLE 12-3
Estimated Annual Energy-Related Greenhouse Gas Emissions[a,b]

Emission Source	Annual Emissions[c] (tons)	
	Emissions	CO_2e
CO_2	1,662.53	1,662.53
CH_4	0.08	1.94
N_2O	0.02	4.89
Total (CO_2e)	**1,669.36 (1,514.42 $MTCO_2e$/yr)**	

[a] Emission estimates from analysis of operational year 2032, which is the year resulting in the greatest amount of operation-related CO_2e emissions.

[b] See Appendix H for GHG emission factor assumptions.

[c] Emission factors taken from EPA eGRID Ninth Edition, Version 1.0 (EPA, 2014b).

***Onsite Equipment Emissions*.** Additional heavy equipment proposed for regular onsite use includes three bulldozers, three compactors, two scrapers, one water truck, one water wagon, three trailer mounted light plants, and two tippers. Light duty cars and trucks are also expected to be regularly used onsite at the landfill. For the purpose of this analysis, it was assumed that onsite equipment would be operated for as much as 12 hours per day. It should be noted, however, that it is unlikely that all onsite equipment would be used simultaneously beginning from the first day of landfill operations. Therefore, this analysis represents a reasonable worst case scenario for potential emissions impacts. GHG emissions were calculated per the methodology described in Section 12.2. The results of this analysis are summarized in Table 12-4.

TABLE 12-4
Total Onsite Equipment Emissions[a,b]

Type of Emissions[c]	CO_2	CH_4	N_2O[d]	CO_2e
Onsite Operation Equipment (exhaust)	2,313	0[e]	N/A	2,317
Onsite Operational Mobile Sources (cars/trucks)	1,174	0[e]	N/A	1,174
Total Onsite Equipment Emissions	**3,487**	**0[e]**	**N/A**	**3,491 (3,167 $MTCO_2e$/yr)**

[a] Emission estimates from analysis of operational year 2032, which is the year resulting in the greatest amount of operation-related CO_2e emissions.

[b] Unless otherwise specified, all values are in tpy, rounded to the nearest ton.

[c] See Appendix H for GHG calculations and assumptions.

[d] EMFAC2011 does not contain emission factors for N_2O, and it does not predict CH_4 emission factors for medium and heavy duty diesel trucks.

[e] Below 0.5 tons per year.

Note:

N/A = not applicable or emission factor not available

Landfill Gas Emissions. LFG results from the anaerobic decomposition of organic materials within a landfill. LFG is principally composed of CH_4 and CO_2 but also includes nonmethane organics, reactive organic compounds,

sulfur compounds, and a variety of other air pollutants as discussed in Chapter 11.0, Air Quality. The existing facility operations include a LFG containment system, which spans the extent of the landfill to limit emissions into the atmosphere and prevent subsurface migration of LFG to adjacent properties. According to the *Landfill Gas Report* by Golder Associates (the Golder Report), methane content in the LFG at CCL is 50 percent by volume (Golder, 2011). CO_2 content was conservatively assumed to be 50 percent for this analysis.

The Golder Report (2011) determined that estimated LFG recovery is 85 percent using EPA LandGEM Model Version 3.02. LFG emissions of N_2O are given a value of 0 grams per standard cubic foot by CARB (CARB, 2011b). Therefore, negligible N_2O emissions would result from LFG. Total CH_4 and CO_2 emissions from fugitive LFG emissions, conservatively assuming 85 percent recovery, are shown in Table 12-5.

TABLE 12-5
Estimated Maximum Annual Landfill-Gas-Related Greenhouse Gas Emissions[a,b]

Emission Source	Annual Emissions (tons)[c]	
	Emissions	CO_2e
Biogenic CO_2	34,386	34,386
CH_4	12,533	313,314
N_2O	N/A	N/A
Project Total (CO_2e)	**347,700 (315,429 $MTCO_2e$/yr)**	

[a] Emission estimates from analysis of operational year 2032, which is the year resulting in the greatest amount of operation-related CO_2e emissions.

[b] See Appendix H for GHG emission factor assumptions.

[c] Emission calculations assume 85 percent recovery.

Note:

N/A = not applicable or emission factor not available

Flaring Emissions. Emissions would be generated by flaring of collected LFG. CO_2 emissions from flaring were calculated based on source testing and projected LFG generation. Detailed flaring emission calculations are included in Appendix H. Table 12-6 shows the estimated operational flaring emissions, conservatively assuming 85 percent recovery of LFG and a flare destruction efficiency of 99 percent. As noted above, from a GHG accounting perspective, it is conservative to assume that all gas is combusted in flares at this efficiency versus with the higher destruction efficiency achieved in gas turbines in the LFGTE plant.

TABLE 12-6
Estimated Maximum Annual Flaring Greenhouse Gas Emissions[a,b]

Emission Source	Annual Emissions (tons)[c]	
	Emissions	CO_2e
Biogenic CO_2	91,908	91,908
CH_4	390	9,751
N_2O[3]	N/A	N/A
Project Total (CO_2e)	**101,659 (92,223 $MTCO_2e$/yr)**	

[a] Emission estimates from analysis of operational year 2032, which is the year resulting in the greatest amount of operation-related CO_2e emissions.

[b] See Appendix H for GHG emission factor assumptions.

[c] Emission calculations conservatively assume 85 percent recovery.

Note:

N/A = not applicable or emission factor not available

Disposal Vehicle/Transportation Emissions. Emissions would be generated by heavy duty trucks transporting refuse to the landfill, as well as recycling and other trucks, and employee and vendor vehicles. In accordance with CARB interim thresholds for GHG emissions, the vehicle exhaust will not be included in the evaluation of the operational emissions impact. The Proposed Project incorporates the CARB interim performance standards for transportation for all vehicles in the project proponent's control.

Emissions were calculated per the methodology described in Section 12.2. Table 12-7 shows the estimated mobile emissions of GHGs.

TABLE 12-7
Estimated Annual Offsite Mobile (Vehicle) Emissions of Greenhouse Gases[a,b]

Emission Source	Annual Emissions (tons)	
	Emissions	CO_2e
CO_2	1,132	1,132
CH_4	0[c]	0[c]
N_2O[d]	N/A	N/A
Project Total (CO_2e)	**1,132 (1,027 $MTCO_2e$/yr)**	

[a] Emission estimates from analysis of operational year 2032, which is the year resulting in the greatest amount of operation-related CO_2e emissions.

[b] See Appendix H for GHG emission factor assumptions and calculations.

[c] Below 0.5 tons per year.

[d] EMFAC2011 does not contain emission factors for N_2O, and it does not predict CH4 emission factors for medium and heavy duty diesel trucks.

Note:

N/A = not applicable or emission factor not available

Subsequent Phase Preparation. As discussed above, the Proposed Project is to be constructed over time in phases, and grading and site preparation associated with these phases would occur prior to the fill of the previous cell. Preparation of a new cell would occur as needed, depending on the duration of each operational phase. GHG emissions from these temporary activities would occur during operation of the landfill and be included as construction impacts. Therefore, in accordance with the CARB interim guideline, emissions from cell construction are not being included in operational GHG calculations. In order to provide a comprehensive estimate of these construction emissions, emissions associated with a prospective phase are included in Table 12-2.

Combined Operational Emissions for Comparison to the Threshold. Table 12-8 combines all of the applicable sources of GHG emissions associated with the operation of the Proposed Project to be compared with the CARB interim threshold, which total approximately 409,166 $MTCO_2e$/yr. Per CARB, this total excludes construction and transportation emissions. This total represents roughly 0.09 percent of California's total 2009 emissions of 457 MMT. These emissions projections indicate the majority of the Proposed Project's potential GHG emissions are associated with LFG.

TABLE 12-8
Projected Maximum Landfill Operational Greenhouse Gas Emissions for Comparison to the Threshold (tons)[a,b]

Type of Emissions[c]	Biogenic CO_2	Anthropogenic CO_2	CH_4	N_2O	CO_2e
Flares	91,908	N/A	390	N/A	101,659
Landfill Gas	34,386	N/A	12,533	N/A	347,700
Indirect Electricity	N/A	1,663	0[d]	0[d]	1,669
Total Landfill Operational Emissions for Comparison to the Threshold	**126,294**	**1,663**	**12,923**	**0[d]**	**451,028 (409,166 $MTCO_2e$/yr)**

[a] Emission estimates from analysis of operational year 2032, which is the year resulting in the greatest amount of CO_2e emissions.

[b] Unless otherwise specified, all values in tons per year, rounded to the nearest ton.

[c] See Appendix H for GHG emission calculations and assumptions.

[d] Below 0.5 tons per year.

Note:

N/A = not applicable or emission factor not available

Project-Level Significance Determination. The GHG emissions from applicable sources associated with the Proposed Project are estimated to equal approximately 409,166 $MTCO_2e$/yr. The impacts of the Proposed Project exceed the CARB significance threshold; therefore, the Proposed Project impacts would be significant.

Project Design Elements that Avoid or Reduce Impacts. Appendix B of *CEQA and Climate Change* (CAPCOA, 2008) identifies mitigation measures and the corresponding reductions in GHG emissions and a range of percentage reductions for a variety of categories including bicycles, pedestrian pathways, parking, design, mixed-use, energy, and construction features. The ranges are indicative of the GHG emission reductions corresponding to each of the features, from a numerical low to high (CAPCOA, 2008). Similarly, Chapter 7 of *Quantifying Greenhouse Gas Mitigation Measures* provides mitigation fact sheets for certain industries, including solid waste. The fact sheets include a list of mitigation measures and their associated GHG emission reductions (CAPCOA, 2010). The existing landfill facility and the Proposed Project both include an LFGTE plant, which is an emissions reduction measure comparable to mitigation measures recommended in the CAPCOA White Paper and report.

LFG will continue to be actively managed using a comprehensive LFG collection and removal system as required by federal and state regulations.

Carbon "Sink" and Sequestration. Emissions of GHGs from fuel use and organic matter decomposition is an inevitable consequence of management of the solid waste produced by society. It must be acknowledged, however, that the disposal of waste in landfills also causes substantial amounts of carbon to be removed from the carbon cycle and permanently sequestered.

Ownership of the sequestration benefits is a complex topic that EPA and other organizations have not attempted to solve. The waste materials are abandoned by their owners, however, and disposed of in the landfill. This discussion considers the carbon sequestration in the landfill, which may prospectively be an offset claimed against the landfill emissions.[1]

Nonetheless, EPA, IPCC, and CEC all recognize landfills as carbon sinks and quantify such storage in national and state-wide GHG budgets. For example, in the recent Inventory of U.S. Greenhouse Gas Emissions and Sinks, 1990-2012 (EPA, 2014c), EPA provides methodology and results for carbon storage via disposal of food scraps and yard trimmings in landfills. The document is clear that the attempt is not to only quantify storage for these waste types; rather, these are specifically identified because other waste types are accounted in other portions of the budget: "Carbon storage estimates are associated with particular land uses. For example, harvested wood products are accounted for under Forest Land Remaining Forest Land because these wood products are considered a component of the forest ecosystem. The wood products serve as reservoirs to which C resulting from photosynthesis in trees is transferred, but the removals in this case occur in the forest."

The IPCC approach is similar in the 2006 Guidelines for National Greenhouse Gas Inventories (IPCC, 2006). Volume 5 of the guidelines covers waste including carbon stored in solid waste disposal sites (SWDS). "Some carbon will be stored over long time periods in SWDS. Wood and paper decay very slowly and accumulate in the SWDS (long-term storage). Carbon fractions in other waste types decay over varying time periods (see Half-life under Section 3.2.3.). The amount of carbon stored in the SWDS can be estimated using the [first order decay] model (see Annex 3A.1). The long-term storage of carbon in paper and cardboard, wood, garden and park waste is of special interest as the changes in carbon stock in waste originating from harvested wood products which is reported in the AFOLU volume (see Chapter 12, Harvested Wood Products)."

Finally, the 2006 Inventory of California GHG Emissions and Sinks (CEC, 2006) is also similar. CEC indicates that, "Lumber and urban wood wastes disposed at landfills contain significant amounts of lignins, which contain carbon, which is sequestered in anaerobic landfills." Quantification of storage for wood products and other organics was included in the inventory.

Unfortunately, none of these methologies is adequate for analysis of site-specific carbon balance. Again, the purpose for all three was to produce national or state-wide GHG inventories without assigning emissions to particular locations. Thus, comprehensive analysis of landfill storage using these references would require combining procedures from multiple sections, including the noted landfill discussions, and in particular also portions of Agriculture, Forestry, and Other Land Use (AFOLU) analyses.

Perhaps the most comprehensive reference which could be applied for site-specific analysis is the "Current MSW Industry Position and State-of-the-Practice on LFG Collection Efficiency, Methane Oxidation, and Carbon Sequestration in Landfills" produced by SCS Engineers on behalf of the Solid Waste Industry for Climate Solutions (SCS Engineers, 2008). In this document, the authors present recommended procedures for analysis of carbon storage in landfills, combining data from EPA, IPCC, various researchers, and other sources. Estimates are presented regarding content and long term storage of carbon for individual and combined waste streams.

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[1] Clear and consistent guidance regarding both the "ownership" of or claim to, and methods for estimation of, this sequestration do not currently exist. Thus this EIR does not attempt to "net" this storage of carbon in the landfill against the reported emissions of GHG from the landfill, or claim that such storage offsets the landfill emissions. Rather, the intent of this discussion is to point out that the carbon storage in the landfill – the carbon sequestered -- may approach or exceed the rate of emissions from the landfill operation. In particular, producers of raw materials that may ultimately end up as landfill waste could potentially claim "right" to the sequestration, and thus try to offset such storage against landfill emissions could potentially represent double counting. As noted above, however, once a generator of waste disposes of waste, it is abandoned and no longer owned by the generator. One example of potential confusion is harvested wood products. Most carbon offset methodologies for forest projects quantify the storage of carbon in wood, including harvested wood products. The methodologies specify procedures for estimation of volume of wood waste that would end up in landfills or otherwise be stored, including estimation of fractions that would remain permanently fixed. Thus it is possible that the carbon in a portion of the wood-derived products in the landfill have already been claimed as a carbon offset, and thus used to displace GHG emissions from industry or other sources. However, this would apply to only a portion of the waste stored, making analysis complex.

Using this methodology, SCS Engineers has estimated the amount of carbon sequestered in the landfill from waste disposal operations in the landfill extension. Utilizing average waste composition factors established by CalRecycle (successor to the California Integrated Waste Management Board), SCS has determined that over the estimated landfill expansion life, CO_2e stored in the landfill is approximately 21.6 million tons, a substantial quantity (SCS Engineers, 2008, 2014; see Appendix H).

Additional Mitigation Measures Required Through the CEQA Process. Required mitigation strategies such as the LFG collection system are in place and will continue to operate. Additional mitigation techniques are presented in Section 12.7.

The CARB interim threshold guidelines require the implementation of all feasible mitigation measures. Mitigation measures to reduce the emissions of GHGs are listed below.

- Idling of heavy duty hauling trucks and off-road mobile sources of any type in excess of 5 minutes, will be restricted.
- When supplemental landfill equipment is purchased, new commercially available equipment will be purchased that meets or exceeds California's emission standards in effect at the time of purchase.
- Onsite vehicles and equipment will be properly maintained per manufacturer's specifications.

In addition to the above measures, within 3 years of final project permitting, the applicant will submit a GHG Reduction Plan that investigates the feasibility of additional GHG reduction measures the Proposed Project could implement to achieve additional reductions in annual GHG emissions. CARB interim performance standards and any future requirements SCAQMD may promulgate will be considered in the Plan, together with the landfill facility's evaluation of sequestered tons.

12.6.3.3 Conclusion

As shown in Table 12-8, operation of the Proposed Project would result in the generation of GHG emissions in exceedance of the 7,000-MTCO2e/yr significance threshold. In accordance with *CEQA Guidelines* for GHGs Question (a), operation activities may result in a potentially significant impact on the environment. Subject to applicable laws and regulations, the emissions from operational activities, may, however, be counterbalanced to a degree by the landfill's carbon sequestration as noted above. However, mitigation strategies, including the required LFG collection system, are being implemented to reduce the Proposed Project's climate change impacts to the furthest extent possible.

12.7 Mitigation Measures

Under CEQA, any project that is determined to have significant impacts must impose all feasible mitigation. Potential mitigation strategies for GHGs are included in California Attorney General's Office's "Addressing Climate Change at the Project Level," OPR's 2008 Technical Advisory, "CEQA and Climate Change: Addressing Climate Change through [CEQA]," CAPCOA's 2008 white paper, and the 2010 *CEQA Guidelines* amendments. The following mitigation measures will be implemented in addition to the required LFG collection system:

GHG-1 The CARB interim performance standards will be implemented and include the following:

- Idling of heavy duty hauling trucks and off-road mobile sources of any type in excess of 5 minutes, will be prohibited.
- When new landfill equipment is purchased, new commercially available equipment will be purchased that meets or exceeds California's emission standards in effect at the time of purchase.
- Onsite vehicles and equipment will be properly maintained per manufacturer's specifications.

GHG-2 Within 3 years of project approval, the applicant will submit a GHG Reduction Plan.

GHG-3 The smallest equipment possible will be used for operations at the landfill to minimize tailpipe exhaust emissions.

GHG-4 Energy conservation practices will be followed, including turning off all unnecessary lights.

12.8 Significance After Mitigation

As stated in Section 12.6.3.3, the emissions generated from the operation of the Proposed Project are significant according to the CARB significance threshold. The impacts associated with the Proposed Project will be mitigated after implementation of mitigation to the fullest extent possible, again in accordance with CARB CEQA significance thresholds. Implementation of the above mitigation measures would result in less- than-significant impacts associated with GHG and Climate Change.

12.9 Cumulative Impacts

12.9.1 Potential Cumulative Impacts

Climate Change. As discussed above, no approved thresholds or methodologies are currently available for determining the significance of a project's potential contribution to GCC in CEQA documents. An individual project (unless it is a large-scale construction project, such as a dam or new freeway project, or a large fossil – fuel-fired power plant) is unlikely to generate sufficient GHG emissions to directly influence GCC; therefore, analysis of a project's contribution to GCC is inherently cumulative and to a considerable degree speculative. The following is a good faith effort at disclosing and evaluating the Proposed Project's potential impact as a portion of climate change impacts associated with build out in the context of the Santa Clarita Valley Specific Area Plan in Los Angeles County. The EIR for the Santa Clarita Valley Area Plan, *One Valley, One Vision,* was finalized in January 2012, and the Santa Clarita Valley Area Plan was adopted in November 2012.

Cumulative build out of the Santa Clarita Valley area would increase GHG emissions by increasing overall population, square footage of commercial, industrial, and other supplementary uses, and by increasing traffic and the associated transportation emissions that make up 38 percent of statewide GHGs. Without corresponding GHG reduction strategies across all new projects and development, significant impacts would occur. However, the analysis of the Proposed Project demonstrates that potential GHG mitigated emissions impacts are not significant, and therefore would not hinder or delay California's attainment of AB 32 objectives. The GHG effects of the Proposed Project are therefore not a significant cumulative impact.

Under AB 32, it is also relevant to consider whether the impacts of climate change would significantly impact the Proposed Project. AB 32 indicates that "the potential effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidence of infections, disease, asthma, and other health-related problems" (State of California 2006, AB 32, §38501[a]). The 2006 CAT Report identifies further possible effects of climate change. As indicated in the CCCC report that assesses the risk of climate change to California, the following is a summary of the potential risks to California:

- A reduction in the Sierra snowpack which could result in a risk to hydropower
- A reduction in the Sierra snowpack that could result in a loss of winter recreation from insufficient snow for skiing and snowboarding
- A decrease in water supply could negatively impact the food supply
- Climate change could increase temperatures, leading to decreased supply of certain agricultural products such as wine, fruit, nuts, and milk
- Climate change could result in plant and animal species relocating to cooler, more habitable "up-slope" locations

- Climate change could negatively affect the health and productivity of California's forests
- Climate change could result in up to a 55 percent increase in wildfires
- A rise in sea levels could result in increased coastal floods and shrinking beaches.

The timing, severity, or precise distribution of these potential long-term impacts cannot be predicted. Most would affect nearly all Californians regardless of where they live or how their housing or workplaces were sited, designed, and developed. Of these potential effects, an increase in wildland fire danger would be most likely to impact the Proposed Project. The project site is located in a high fire hazard area, and an increase in overall wildland fire danger would increase exposure of people or structures to a risk of loss or injury.

12.9.2 Mitigation Measures Required for Cumulative Impacts

Mitigation measures for cumulative impacts are the same as the mitigation measures presented in Section 12.7. No additional mitigation measures are required.

12.9.3 Significance After Mitigation

As stated in Section 12.6.3.3, the emissions generated from the operation of the Proposed Project are significant according to the CARB significance threshold. The impacts associated with the Proposed Project will be less-than-significant after implementation of mitigation to the fullest extent possible, in accordance with CARB CEQA thresholds.

CHAPTER 13.0

Noise

13.1 Introduction

This chapter describes the existing noise setting in the vicinity of the Chiquita Canyon Landfill (CCL), the regulatory setting used as the basis for developing the applicable standards of significance, and the methodology used for determining the potential noise impacts due to implementation of the CCL Master Plan Revision (Proposed Project).

The purpose of this noise analysis is to evaluate the existing noise setting at the CCL property boundary near existing land uses adjoining the landfill and other noise-sensitive land uses in the vicinity of CCL, assess potential operation and construction noise impacts due to the Proposed Project, and identify the level of noise mitigation, if required.

13.2 Methodology

A site visit and detailed noise measurements were conducted to document existing sources of noise and background noise levels at neighboring lands in the vicinity of CCL (Figure 13-1). The noise level measurements included both long-term (24-hour) and short-term measurements.

To assess potential noise impacts resulting from the Proposed Project, construction and operation noise levels were evaluated.

13.2.1 Fundamentals of Acoustics

Acoustics is the study of sound, and noise is defined as unwanted sound. Airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure, creating a sound wave. Acoustical terms used in this section are defined in Table 13-1.

TABLE 13-1
Definitions of Acoustical Terms

Term	Definition
Ambient sound level	The composite of sound from all sources near and far. The normal or existing level of environmental noise or sound at a given location. The ambient level is typically defined by the A-weighted equivalent sound pressure level (L_{eq}).
Background sound level	The underlying ever-present lower level sound that remains in the absence of intrusive or intermittent sounds. Distant sources, such as traffic, typically make up the background. The background level is generally defined by the L_{90} percentile noise level (L_n).
Intrusive	Sound that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, tonal content, the prevailing ambient noise level, and the sensitivity of the receiver. The intrusive level is generally defined by the L_{10} L_n.
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter.
A-weighted sound level (dBA)	The sound level in dBs as measured on a sound level meter using the A-weighted filter network. The A-weighted filter deemphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and generally correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Equivalent sound level (L_{eq})	The average dBA, on an equal energy basis, during the measurement period.

TABLE 13-1
Definitions of Acoustical Terms

Term	Definition
Day-night sound level (L_{dn})	The L_{dn} is a 24-hour average L_{eq} where 10 dBA is added to nighttime levels between 10:00 p.m. and 7:00 a.m. For a continuous source that emits the same noise level over a 24-hour period, the L_{dn} will be 6.4 dBs greater than the L_{eq}.
Percentile sound level (L_n)	The sound level exceeded during n percent of the measurement period, where n is a number between 0 and 100 (for example, L_{90}).

Source: Beranek and Vér, 1992.

The most common metric for sound measurement is overall dBA, which has been adopted by regulatory bodies worldwide. The network measures sound in a similar fashion to the way in which a person perceives or hears sound. There is consensus that A-weighting is appropriate for estimation of the hazard of noise-induced hearing loss. With respect to other effects, such as annoyance, A-weighting is acceptable if there is largely middle and high frequency noise present, but if the noise is unusually high at low frequencies, or contains prominent low frequency tones, the A-weighting may not give a valid measure.

Typically A-weighted sound levels are measured or presented as equivalent sound pressure level (L_{eq}), which is defined as the average noise level on an equal energy basis for a stated period of time, and is commonly used to measure steady-state sound or noise that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by $L_{xx,}$ where xx represents the percentile of time the sound level is exceeded. The L_{90} is a measurement that represents the noise level that is exceeded during 90 percent of the measurement period. Similarly, the L_{10} represents the noise level exceeded for ten percent of the measurement period.

The effects of noise on people can be categorized in three ways:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise may produce effects in the first two categories only. However, workers in industrial plants may experience noise effects in the last category. No completely satisfactory way exists to measure the subjective effects of noise, or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is by comparing it with the existing or "ambient" environment to which that person has adapted. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

LEGEND

- Project Boundary
- Long-Term (24-Hour) Monitoring Site
- Short-Term Monitoring Site

N

0 0.125 0.25
Miles

FIGURE 13-1
Noise Monitoring Locations
Chiquita Canyon Landfill
Master Plan Revision

Table 13-2 shows the relative A-weighted levels of common sounds measured in the environment and in industry for various sound levels.

TABLE 13-2
Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance	dBA in dB	Qualitative Description
Carrier deck jet operation	140	
	130	Pain threshold
Jet takeoff (200 feet)	120	
Automobile horn (3 feet)	110	Maximum vocal effort
Jet takeoff (2,000 feet) Shout (0.5 foot)	100	
New York City subway station Heavy truck (50 feet)	90	Very annoying Hearing damage (8-hour, continuous exposure)
Pneumatic drill (50 feet)	80	Annoying
Freight train (50 feet) Freeway traffic (50 feet)	70 to 80	
	70	Intrusive Telephone use difficult
Air conditioning unit (20 feet)	60	
Light automobile traffic (50 feet)	50	Quiet
Living room Bedroom	40	
Library Soft whisper (5 feet)	30	Very quiet
Broadcasting studio	20	Recording studio
	10	Just audible

Notes:
Source: Adapted from Table E, New York Department of Environmental Conservation, 2001
dB = decibel
dBA = A-weighted sound level

As sound travels from the source to the receiver (propagates through the atmosphere), the sound level is reduced by a number of factors including:

- Geometric spreading (distance attenuation)
- Atmospheric absorption
- Ground absorption
- Shielding or barrier effects from barriers or terrain

Typically the greatest reductions are the result of geometric spreading or distance losses. Sounds from a localized source (approximating a “point” source) generally decreases at a rate of 6 dBA for each doubling of the distance (6 dBA/DD) where the starting distance is in the acoustical far field. (The far field generally starts beyond the largest dimension of the source. For most typical construction equipment, a far field reference distance of 50 feet is often used).

Changes in sound levels from similar broadband sources (i.e., traffic with traffic) are generally perceived as follows:

- A 3-dBA change is barely perceptible.
- A 5-dBA change is readily perceptible.
- A 10-dBA change is perceived as a doubling or halving of noise.

13.2.2 Construction Noise

There are four general construction activities associated with the Proposed Project: disposal module excavation and construction; entrance construction; entrance facility construction; and landfill closure. Construction of the new entrance is anticipated to follow the project approval (mid-2015) and occur over a period of approximately 9 months. Disposal module excavation and construction are anticipated to occur over a period of 6 to 9 months every 18 months to 5 years during the first 20 years of the Proposed Project.

Construction equipment used for the construction activities will be typical earthmoving equipment (consistent with equipment used for landfill operations) and is anticipated to include scrapers, bulldozers, compactors, backhoe/loaders, graders, and trucks. The specific types and number of equipment operating at any particular location will be dependent on the type and size of the construction activities. Table 13-3 presents the sound levels for typical construction equipment.

TABLE 13-3
Typical Equipment Noise Levels for Heavy Construction Projects

		Equipment Type	Range in Noise Level at 50 feet (dBA)
Equipment Powered by Internal Combustion Engines	Earth Moving	Front loaders	72–84
		Backhoes	72–93
		Tractors	77–96
		Scrapers	80–93
		Graders	80–93
		Pavers	86–89
		Trucks	82–94
	Materials Handling	Concrete mixers	75–88
		Concrete pumps	81–84
		Cranes, movable	75–88
		Cranes, derrick	86–89
	Stationary	Pumps	68–72
		Generators	71–82
		Compressors	74–87

Source: Oregon Department of Transportation, 2011

13.2.3 Operation Noise

As a result of the Proposed Project, the maximum daily disposal tonnage would increase from 6,000 to 12,000 tons. The maximum weekly disposal tonnage would increase from 30,000 to 60,000 tons. The number of vehicles using the landfill on a peak weekday associated with these increased tonnage rates would roughly double.

The following considerations and assumptions regarding operation noise relative to the Proposed Project have been made:

1. Detailed reference noise measurements of actual landfill operating activities were conducted on August 15, 2005. The noise measurements were taken approximately 250 to 300 feet from the normal landfill operation activities.
2. Noise levels for future operation activities would increase by 3 dBA (as a result of a doubling of sources, including doubling of traffic volume).
3. For a conservative assessment, it is assumed that the landfill active face is located at the extension area boundary nearest to the noise receiver.

4. If the operation activities are totally screened by large solid objects, such as buildings or topographical features, which act as effective acoustic screens, a 15 to 20 dBA reduction is applied to the calculated noise level.
5. For a conservative approach, atmospheric absorption is not accounted for in the analysis.
6. The operation noise level at the noise-sensitive receiver is compared with the noise limits of County of Los Angeles. If it exceeds the requirements, noise abatement measures will be recommended.

13.3 Regulatory Setting

13.3.1 Local Criteria

The Los Angeles County General Plan, adopted in 1980, with subsequent adoption dates, includes a Noise Element which adopts the State of California noise/land use compatibility guidelines for compatibility between different land uses and their noise environment. Noise elements assist in planning for future land uses including transportation, industrial, and noise-sensitive uses such as residential, and to assist in the land use compatibility evaluation. The General Plan is currently being revised, and the draft 2013 Noise Element (Los Angeles County, 2012) maintains the same general goal of ensuring land use compatibility between proximate land uses.

The Noise Control Ordinance of Los Angeles County (Title 12 Chapter 12.08) was adopted in 1978 and amended in 2001 to prohibit loud, unnecessary, and unusual noise that disturbs the peace and/or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area. The ordinance also provides sound limits for different land uses, which are assigned noise zones and corresponding noise limits, as shown in Table 13-4.

TABLE 13-4
Noise Zone Designations and Noise Level Limits

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Noise Level Limit (L_{50}, 30 minutes in any hour, dBA)
		Exterior	
I	Noise-Sensitive Area	Anytime	45
II	Residential Properties	10:00 p.m. to 7:00 a.m. (nighttime)	45
		7:00 a.m. to 10:00 p.m. (daytime)	50
III	Commercial Properties	10:00 p.m. to 7:00 a.m. (nighttime)	55
		7:00 a.m. to 10:00 p.m. (daytime)	60
IV	Industrial Properties	Anytime	70

Source: County of Los Angeles, 1978a

Adjustments to these levels are provided in the event the existing levels exceeded these criteria or the sounds are of shorter duration as follows:

- +5 dBA for 15 minutes in any hour (L_{25})
- +10 dBA for 5 minutes in any hour ($L_{8.3}$)
- +15 dBA for 1 minute in any hours ($L_{1.7}$)
- +20 dBA at any time
- If the existing statistical levels exceeds the standard, then the existing level becomes the standard

When the noise source originates on an industrial property and is impacting another noise zone, the applicable exterior noise level is the daytime exterior noise level for the subject receptor property.

The ordinance also includes construction noise restrictions, as presented in Table 13-5. As shown in the table, the maximum noise level limits from mobile construction equipment between the hours of 7:00 a.m. and 8:00 p.m. are 85 dBA at semi-residential and commercial areas. For stationary equipment, the maximum noise level limits are 15 dBA lower than for mobile equipment. Construction activities which result in a noise disturbance at residential or commercial properties are prohibited between the hours of 7:00 p.m. and 7:00 a.m. or at any time on Sundays or holidays.

TABLE 13-5
Construction Noise Limits

Time	Noise Limits (dBA)		
	Single-Family Residential	**Multi-Family Residential**	**Semi-Residential/ Commercial**
Mobile Equipment (intermittent, short-term operations less than 10 days)			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75	80	85
Daily, 8:00 p.m. to 7:00 a.m., and all day Sunday and legal holidays	60	65	70
Stationary Equipment (activities lasting 10 or more days)			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60	65	70
Daily, 8:00 p.m. to 7:00 a.m., and all day Sunday and legal holidays	50	55	60

Source: County of Los Angeles, 1978b

13.4 Project Setting

The following sections describe the existing noise environment in the Proposed Project area.

13.4.1 Existing Operation

Conditional Use Permit (CUP) No. 89-081(5) allows the landfill to operate 24 hours per day, except from 5:00 p.m. Saturday through 4:00 a.m. Monday. Access to the landfill by both commercial and general public vehicles is allowed during all hours the landfill is operating. However, CCL generally limits access to the working area by general public vehicles to daylight hours. CUP No. 89-081(5) allows CCL to operate on up to four Sundays during quarterly Val Verde cleanup days. Landfill maintenance activities may occur 24 hours per day, 7 days per week.

CCL currently operates according to the following schedule.

Commercial Customers

Monday	4:30 a.m. to 5:00 p.m.
Tuesday through Friday	3:00 a.m. to 5:00 p.m.
Saturday	4:30 a.m. to 3:00 p.m.

General Public Customers

Monday through Friday	7:00 a.m. to 5:00 p.m.
Saturday	6:00 a.m. to 2:00 p.m.

CCL may occasionally extend Saturday operating hours to 5:00 p.m. to support community cleanup activities or the special needs of its commercial customers. Additionally, CCL frequently operates during nighttime hours

to accommodate special projects that require disposal during off-traffic hours. For example, in 2012, CCL operated 24 hours per day 184 times.

CUP No. 89-081(5) allows composting activities to occur 24 hours per day, 7 days per week.

The Proposed Project includes continued operation of the landfill and ancillary activities during times consistent with the current CUP.

The open operating face of the landfill is generally limited to about 1 acre in size.

13.4.2 Existing Equipment

Equipment used at the landfill includes bulldozers, landfill compactors, scrapers, a motor grader, backhoe/ loader, and water trucks and is typical of earthmoving construction equipment. The specific equipment used at CCL varies based on task and workload. All landfill equipment is maintained on a regular basis to remain in good working order. Equipment is routinely inspected and maintained on an as-needed basis and as recommended by the manufacturer.

13.4.3 Surrounding Existing Land Use

Much of the area surrounding CCL consists of undeveloped open space as a result of steep topography, which serves to isolate or insulate CCL from its more distant neighbors. Surrounding land uses include mostly open space lands to the north; rural residential development is located to the west and northwest along Chiquito Canyon Road and in the Val Verde area. Relatively new suburban residential areas are located to the northeast; these residences are separated from CCL by the Commerce Center commercial area. The closest noise-sensitive area is the rural residential community of Val Verde, which, at its closest point, is approximately 500 feet as the crow flies from the property boundary and approximately 0.50 miles from existing landfill activities. The Val Verde community is separated from the landfill by a significant ridgeline, which blocks the line of sight and serves as a very effective noise barrier. This feature will not change as a result of the Proposed Project. Noise generated at CCL was not noticeable in Val Verde when background noise level measurements were conducted for the project in September 2005.

Industrial/commercial uses are located to the northeast, east, and southeast. The United States Postal Service has a General Mail Facility adjacent to the eastern edge of the landfill property boundary. The property immediately west and south of the landfill is owned by the Newhall Land and Farming Company (NLF) and is currently either vacant or used for agricultural activities. Oil extraction fields and associated storage areas are located less than 1 mile from the landfill to the west and south. Valencia Travel Village, a short- and long-term recreational vehicle resort, is located approximately 1 mile east of the landfill on the south side of State Route 126 (SR-126).

13.4.4 Measured Existing Noise Levels

Background noise level measurements were conducted at four locations in the vicinity of CCL. Long-term noise level measurements were conducted at two property line locations on September 15 and 16, 2005. Land uses in the vicinity of CCL have not changed since the measurements were collected, nor has the mix of equipment used at CCL changed significantly. No additional residential or commercial developments near CCL have been constructed, and no new potentially sensitive noise receptors have been identified.

Short-term noise level measurements were conducted at two offsite locations, one in the residential area of Val Verde approximately 0.5 miles from the existing landfill activities and the other west of the landfill entrance on Wolcott Way north of SR-126 (the site of the proposed new entrance). Figure 13-1 depicts the short- and long-term noise monitoring locations. The noise monitoring locations were selected based on their being representative of adjoining land uses potentially affected by Proposed Project implementation, described as follows:

- **Site 1 –** A short-term location, in the community of Val Verde, closest to the landfill, directly across the street from 28959 Windsor Road, at the intersection of Windsor Road and Hunstock Street

- **Site 2** – A short-term location, at the proposed new entrance to the landfill on Wolcott Way, at the intersection of Wolcott Way and Franklin Parkway
- **Site 3** – A long-term location, in the vicinity of the existing post office building and near the Proposed Project extension area (east)
- **Site 4** – A long-term location, at the property line west of the landfill (west)

Appendix I-1 includes photographs of the noise monitors as they were set up at each monitoring location. Long-term measurement equipment consisted of two Larson Davis (LD) Model 820 sound level meters, and short-term measurements were collected with LD Model 824. A LD CAL-200 acoustical calibrator was used for calibration of the microphones to ensure the accuracy of the measurements. All the equipment complies with the requirements of American National Standards Institute and the International Electrotechnical Commission for precision (Type 1) sound level measurement instrumentation.

Weather conditions during the measurements consisted of clear skies with calm to slightly breezy wind conditions, and temperatures were between 75 degrees Fahrenheit (°F) in the morning to 80°F in the afternoon.

Table 13-6 summarizes the short-term noise measurement results. Long-term measurement results are summarized in Table 13-7. The detailed noise measurement data are attached to this report in Appendix I-2.

TABLE 13-6
Summary of Short-Term Background Noise Levels

Location	Measurement Start Time	Duration (mins)	L_{eq}	L_{min}	L_{max}	L_n			
						L_8	L_{25}	L_{50}	L_{90}
Site 1	2:25 p.m.	15	52	42	76	54	51	48	45
Site 2	2:55 p.m.	15	57	47	72	59	56	52	46

L_8 = 8 percent exceeded sound level
L_{25} = 25 percent exceeded sound level
L_{90} = 90 percent exceeded sound level
L_{max} = maximum sound level
L_{min} = minimum sound level

TABLE 13-7
Summary of Long-Term Background Noise Levels

	L_{eq}	L_{min}	L_{max}
Site 3			
Daytime	42 – 56	35 – 40	51 – 74
Nighttime	42 – 46	34 – 41	52 – 64
Site 4			
Daytime	37 – 57	31 – 51	47 – 70
Nighttime	37 – 53	32 – 45	46 – 61

Notes:
Daytime has been classified as between the hours of 7:00 a.m. to 10:00 p.m.
Nighttime has been classified as between the hours of 11:00 p.m. to 6:00 a.m.

13.4.5 Landfill Operation Reference Source Measurements

Noise-generating operational activities at CCL include truck unloading activities, the operation of heavy equipment in the disposal area, such as bulldozers and compactors), and customer traffic entering and leaving

the site. Mobile noise generators at the landfill include water trucks, scrapers, and portable lights. During normal operation, machinery, vehicle engines, tires, back-up signals, solid waste disposal, and soil moving activities generate noises.

In order to measure the noise level of these activities, a reference source measurement was performed near the active face of the landfill operation on August 15, 2005. The purpose of this measurement was to determine the level of noise generated by the active landfill operations. The measurement was taken at a distance of approximately 250 to 300 feet of the normal landfill operation. The average level (L_{eq}) was approximately 69 dBA. The minimum (L_{min}) noise level was approximately 61 dBA. The maximum (L_{max} – representative of the loudest 1-second period) was approximately 80 dBA.

13.5 Potential Impacts

Noise effects of the Proposed Project during construction and operational phases were evaluated to determine the potential impacts and need for mitigation.

13.5.1 Standards of Significance

Based on *California Environmental Quality Act* (*CEQA*) *Guidelines*, a project would normally have a significant effect on the environment if it conflicts with the adopted environmental plans and goals of the community in which it is located, substantially increases the ambient noise levels for adjoining areas, or exposes people to severe noise levels.

The following criteria have been established to quantify the significance of an adverse effect for evaluation pursuant to *CEQA Guidelines*. A project would normally result in a significant impact if the Proposed Project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established by County of Los Angeles
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels
- A substantial permanent increase in ambient noise levels in the vicinity of CCL above levels existing without the Proposed Project
- A substantial temporary or periodic increase in ambient noise levels in the vicinity of CCL above noise levels existing without the Proposed Project

For the purpose of this noise evaluation, a substantial increase in ambient noise levels has been defined as a 5 dBA increase in L_{dn} or L_{eq} or more, which would be readily perceptible to a person with normal hearing.

13.5.2 Proposed Project

13.5.2.1 Construction

Construction activities would result in a temporary direct increase in ambient noise levels around the construction area. The actual increase in offsite sound levels would depend on the construction activity occurring, the location of that activity, and the number and mix of construction vehicles and equipment in use and will vary over time. Construction activities are anticipated to occur during the day when ambient levels are typically higher and residences are less sensitive to noise.

At its closest point, the landfill construction activities are approximately 1,200 feet from the closest residential area (represented by Site 1, Val Verde). Assuming an average construction equipment sound level of 85 dBA at 50 feet, consistent with Table 13-3, and up to 44 pieces of equipment operating simultaneously, the predicted residential sound level is 54 to 59 dBA (evaluated using a 20- and 15-dBA barrier reduction for the intervening mountain ridgeline). Such levels comply with the Los Angeles County daytime sound requirements of 60 dBA for construction activities lasting 10 or more days. When construction operations are occurring in more distant areas, equipment is dispersed beyond 1,200 feet or less equipment is in use, the predicted sound levels will decrease.

13.5.2.2 Operation

The Proposed Project would extend the waste footprint by 143 acres toward the south and east within the property line of the landfill. At its closest point, the landfill operations are approximately 1,200 feet from the closest residential area (represented by Site 1, Val Verde). When the methodology of Section 13.2.3 is applied, the expected average sound level is 40 to 45 dBA (evaluated using a 20 and 15 dBA barrier reduction for the intervening mountain ridgeline). Such levels comply with the Los Angeles County requirements of 50 dBA for sounds emanating from an industrial source and received by residential properties and are less than the measured existing levels. When landfill operations are occurring in more distant areas, the predicted sound levels will decrease.

In addition, truck and other vehicular traffic to and from the landfill will use SR-126. CCL-generated traffic is, and will continue to be, a small percentage of total vehicle volume on SR-126; therefore, the traffic generated by the Proposed Project would result in negligible changes to traffic noise levels along SR-126.

13.6 Mitigation

13.6.1 Construction

The Proposed Project will be constructed in manner to ensure the applicable County of Los Angeles noise requirements are satisfied. Therefore, no noise mitigation is required for construction activities associated with the Proposed Project.

13.6.2 Operation

The Proposed Project will be operated in a manner to ensure the County of Los Angeles noise requirements are satisfied. Therefore, no noise mitigation is required for operation of the Proposed Project.

13.7 Significance After Mitigation

The Proposed Project impacts associated with noise would be less than significant without mitigation.

13.8 Cumulative Impacts

The cumulative impact analysis considers the combined noise impacts of the Proposed Project with the nearby related projects identified in Chapter 3.0, General Setting and Resource Area Analysis. Most notable on this list, based on proximity to the Proposed Project, are the Newhall Ranch developments, located immediately south, east, and west of the Proposed Project and the California Department of Transportation (Caltrans) SR-126/ Commerce Center Drive Interchange Improvements Project (SR-126 Improvements Project), located approximately 1 mile east of the Project. Construction and occupancy of all four of the Newhall Ranch developments will occur roughly between 2014 and 2033 (NLF, pers. comm., 2014). The first, Mission Village, is located southeast of the landfill. Construction of the SR-126 Improvements Project began in late 2012 and is estimated to be completed in late 2015/early 2016.

The estimated construction noise level for the Proposed Project will be below the statutory requirement of Noise Control Ordinance of Los Angeles County. During the construction phase, the maximum noise level is estimated to be 59 dBA at the nearest residential property. Construction of the Newhall Ranch project, south of SR-126, is not expected to influence the sound levels at the nearest homes in Val Verde or those located northeast of the landfill because of large distances (over 1 mile) and shielding provided by intervening topography. Therefore, the cumulative construction noise from simultaneous construction of the Proposed Project in combination with Newhall Ranch would result in noise levels consistent with the County's requirement. Therefore, the Proposed Project would result in no significant cumulative impact during construction.

The operational noise from the Proposed Project at all the noise-sensitive areas will comply with the Noise Control Ordinance of Los Angeles County. CCL-generated traffic is, and will continue to be, a small percentage of total vehicle volume on SR-126; therefore, the traffic generated by the Proposed Project would result in negligible changes to traffic noise levels in the area. The SR-126 Improvements Project may result in traffic

noise level conditions that exceed their noise abatement guidelines (generally 66 dBA in residential areas). If this occurs, Caltrans would require the evaluation and likely construction of sound walls to reduce traffic noise in dense residential areas, as a part of the SR-126 Improvements Project, where such measures are needed and feasible to construct. Therefore, the cumulative impact that will result from the combination of the Proposed Project's incremental impact and the effects of other projects is not significant.

CHAPTER 14.0

Public Services and Utilities

14.1 Introduction

This chapter focuses on the existing public services and utilities at or in the vicinity of the Chiquita Canyon Landfill (CCL). The potential impacts that could result to public services and utilities from implementing the CCL Master Plan Revision (Proposed Project) are evaluated and the significance of those impacts is analyzed. Mitigation measures to avoid or reduce any potentially significant impacts to public service and utilities are proposed where applicable. Public services include police protection, fire protection, and schools, parks, or other public facilities. Utilities include energy systems, both electrical and natural gas, and water supply and sewage disposal.

14.2 Methodology

The study area for this resource is defined as the public service area (i.e., school district or city police jurisdiction) in which CCL is located. Public services include fire protection, police protection, schools, and other public facilities, such as hospitals, which are generally provided by the applicable county or municipality. Utilities include electricity, natural gas, water supply, and sewage disposal. California State government and education codes, and the County of Los Angeles' plans, policies, and programs were reviewed to identify potential impacts to public services as a result of the Proposed Project. The significance of the impacts was assessed in accordance with criteria presented in Appendix G of the *California Environmental Quality Act (CEQA) Guidelines.*

14.3 Regulatory Setting

14.3.1 State Regulations and Standards

14.3.1.1 California Environmental Quality Act

The *CEQA Guidelines*, Appendix G, identify the criteria that must be considered when analyzing a project's potential to result in temporary and permanent impacts on public services.

14.3.1.2 California Government Code Sections 65996-65997

California Government Code Sections 65996-65997 establish that the levy of a fee for construction of an industrial facility be considered mitigating impacts on school facilities.

14.3.1.3 California Education Code Section 17620

California Education Code Section 17620 allows a school district to levy a fee against any construction within the boundaries of the district for the purpose of funding construction of school facilities.

14.4 Regional Setting and Project Setting

This section provides an overview of the public services and utilities at or in the vicinity of CCL. A review of the following public services and utilities is provided herein: police protection, fire protection, and schools, parks, or other public facilities, and energy systems, both electrical and natural gas, water supply and sewage disposal.

14.4.1 Police Protection

The Los Angeles County Sheriff's Department provides police protection services to the Santa Clarita Valley. The Santa Clarita Valley Sheriff Station is located at 23740 Magic Mountain Parkway in the City of Valencia, which is approximately 8 miles from CCL. The County Sheriff or Deputies do not routinely enter CCL property,

but would be called on in case of a security emergency. CCL also implements onsite security measures including controlled access and security lighting.

14.4.2 Fire Protection

CCL is located within Los Angeles County Fire Zone No. 4, which is a rugged, undeveloped area covered with combustible chaparral, sage scrub, and non-native grassland. These vegetation communities can provide a heavy fuel-load fire hazard when mature. The climate of the region is characterized as Mediterranean. Winters are generally cool and moderately wet, while summers tend to be hot and dry. The area receives an average annual precipitation of 13 to 14 inches. The period of concern is during the summer and fall months when soil moisture is reduced and periods of Santa Ana winds combined with extremely low humidity occur.

CCL is in compliance with state and local fire protection agency landfill perimeter clearance requirements. A 150-foot buffer zone is maintained around the active working face of the landfill to comply with the flammable clearance provisions of *California Government Code* Section 66784.3. All material capable of supporting combustion is removed from the firebreak area. CCL buildings and structures meet the requirements of *California Public Resource Code* Section 4373, which requires that any building or structure within 150 feet of the periphery of exposed flammable solid waste be maintained with a clearance of flammable material for a minimum of 150 feet.

Fire prevention practices for landfill equipment and vehicles include frequently removing debris and dust from undercarriages and engine compartments, regular washing of equipment, and checking for and repairing oil and fuel leaks. In addition, most of the heavy equipment have a fire suppression system built into the engine compartment to automatically detect and extinguish equipment fires. Also, portable fire extinguishers and spark arrestors (on equipment manifolds) are provided on all landfill equipment. The entrance facilities and maintenance buildings are also equipped with fire extinguishers suitable for extinguishing any minor fires and for maintaining personnel safety.

CCL also currently maintains one 10,000-gallon water wagon, two 4,000-gallon water truck, and four bulldozers onsite that are available 24 hours per day. All trucks, bulldozers, and heavy equipment at the landfill have fire extinguishers. There is also a fire extinguisher in every vehicle and building onsite. Additionally, the landfill has eight water storage tanks located throughout the site, two of which are connected to fire hydrants at the administrative office and the maintenance shop. Additionally, the water line from the Valencia Water Company (VWC) tanks on the north end of the site has the ability to supply 50,000 gallons of water per hour and is equipped with a fire hydrant along the line. Any fire that occurs in a refuse fill area is extinguished by landfill personnel using appropriate landfill equipment, stockpiled soil cover, and when necessary, a water truck. The Los Angeles County Fire Department is summoned if necessary.

Fire protection service for CCL is provided by the County of Los Angeles Fire Department. CCL is within the area served by Station 76, located at 27223 Henry Mayo Drive in Valencia. Station 76 is approximately 2.5 miles east of CCL, with an average response time of approximately 3 to 4 minutes (Hernandez, pers. comm., 2010).

14.4.3 Schools, Parks, or Other Public Facilities

Live Oak Elementary School, located at 27715 Saddleridge Way in Castaic, and the Castaic Union School District administration building, located at 28131 Livingston Avenue in Valencia, are within several miles of CCL. Parks located in proximity to CCL include Val Verde Park and Hasley Canyon Park.

14.4.4 Energy Systems

Electricity at CCL is provided by Southern California Edison (SCE) from an existing power line. The existing landfill operation uses electricity for lights, air conditioning, office machines, and the landfill gas (LFG) extraction system. An onsite generator is used in the event that power is temporarily cut off to the landfill. Energy produced by the LFGTE facility at CCL is sold into the power grid and not consumed onsite.

SCE's existing Saugus-Elizabeth Lake-Fillmore 66 kV Subtransmission Line currently runs parallel to SR-126 near CCL in an existing easement that is set back in locations ranging from approximately 100 to 300 feet north

of SR-126. In order to accommodate the Proposed Project, CCL has requested SCE to relocate an approximately 3,260-foot portion of the 66 kV line between the east side of Wolcott Way to a location approximately 880 feet west of the current CCL entrance. The portion of the existing 66 kV line to be relocated consists of approximately 7 wood poles and approximately 2 wood "H-frame" structures, which range in height between 70 and 100 feet. The 66 kV line will be relocated approximately 300 feet to the north of the existing 66 kV line into a new easement to be provided by CCL. SCE anticipates that the relocated 66 kV line will consist of approximately eight to ten new lightweight steel and/or tubular steel poles, which will range in height between 70 and 110 feet, and that the length of the relocated line will be approximately 3,700 feet.

14.4.5 Water Supply

14.4.5.1 Current Water Supplies

CCL is not connected to a public water utility system. Drinking water is provided to employees by a bottled-water distributor who delivers drinking water by truck; current potable water consumption is approximately 100 gallons a day.

Water for dust control, irrigation, and fire prevention currently is obtained from an offsite irrigation well that is owned by Newhall Land and Farming Company (NLF). Such water is also required for soil compaction during onsite construction projects, such as liner construction. Water is pumped from the irrigation well to eight water tanks located throughout CCL, where it is stored until needed. The amount of water required varies according to the season and rainfall amounts, with more water being required during the hot, dry summer months and during years with limited rainfall. The approximate annual total demand for non-potable water from 2009 through 2013 is shown in Table 14-1; average water consumption is approximately 77 acre-feet per year (afy).

TABLE 14-1
CCL Non-Potable Water Use (afy), 2009 to 2013

Year	2009	2010	2011	2012	2013
Demand	98	60	87	67	74

14.4.5.2 Future Water Supplies

Under an existing agreement between CCL and NLF, once the latter has need for the water currently provided by its irrigation well, which is expected to occur in the foreseeable future, the landfill will cease to use the NLF irrigation well. Instead, CCL will use a separate water supply line that connects to VWC's system and which is currently used as a source of water for construction projects. VWC serves approximately 100,000 people in the Santa Clarita Valley, including Valencia, Stevenson Ranch, and portions of Newhall, Saugus, and Castaic, and will provide water to CCL when needed in the future. VWC serves a mix of approximately 50 percent groundwater pumped from wells and 50 percent imported water, principally from the State Water Project (SWP), which is purchased from Castaic Lake Water Agency (CLWA)[1]. VWC supplies an average of approximately 31,610 afy to its customers (VWC, 2010). Prior to connection to VWC's water system, CCL will pay Facility Capacity Fees to the CLWA in accordance with CLWA policies and procedures. See Appendix H, which includes the Water Supply Assessment for the CCL Master Plan Revision.

Extending CCL's current waste disposal area by approximately 143 acres within its existing site boundaries (the Proposed Project) will extend the project site to include two parcels (numbers 11 and 13) that are outside CLWA's current service area. Water demand associated with this expansion outside the CLWA service area was not considered in the *2010 Santa Clarita Valley Urban Water Management Plan* (See Wat. Code, § 10631, subd. [a]). The estimated water use on these two parcels during peak landfill operations is approximately 21 afy and 12 afy, respectively, for a total of 33 afy outside of the current CLWA service area.

[1] CLWA is a water wholesaler that provides about half of the water used by Santa Clarita households and businesses. CLWA treats and delivers water to four local water retailers known as the Local Purveyors: VWC, CLWA—Santa Clarita Water Division (which is a division of CLWA); Los Angeles County Waterworks District No. 36; and Newhall County Water District. CLWA operates two potable water treatment plants, storage facilities, and over 17 miles of transmission pipelines.

CLWA, however, anticipates having a temporary surplus of water supply of at least 33 afy for sale to VWC to serve the Proposed Project during the period covered by the 2010 Urban Water Management Plan (UWMP) (2010-2050). The project is expected to be connected to the CLWA recycled water system well before the end of the period covered by UWMP and would no longer require surplus potable supplies at that time. CLWA also delivers highly treated recycled water from one of the two existing water reclamation plans in the Santa Clarita Valley owned by the Sanitation Districts of Los Angeles County. The recycled water is used to meet a portion of the non-potable water demands (golf courses and landscape irrigation, etc.) in the Santa Clarita Valley. As CLWA has the power under its Act to sell water supplies that are surplus to the needs of existing users to those outside the service area, CLWA will make available for sale to VWC 33 afy of the CLWA's annual temporary supply of surplus water for the purpose of distribution to the Proposed Project. This surplus water will be provided by the Agency conditioned upon CCL submitting an application for annexation of the parcels outside of the CLWA service area on the earliest possible date (see discussion below). Additionally, no imported water or temporary surplus water will be sold or distributed to VWC for use by the Proposed Project prior to payment of all associated facility and connection fees to CLWA. Prior to connection to VWC's water system, the applicant shall pay Facility Capacity Fees to the CLWA in accordance with CLWA policies and procedures.

Any surplus water provided by the Agency to VWC will be a temporary and conditional source of water, and will not be a current firm source of water supply for the Proposed Project within the meaning of CEQA or Water Code, sections 10910-10914. By sale of any temporary surplus water to VWC for use by the Proposed Project, no right to the sale or distribution of Agency surplus water or use of Agency facilities is created. Furthermore, at any time and for any reason the CLWA may choose to discontinue its sale of temporary surplus water to VWC for use by the Proposed Project.

As water supplies in the CLWA service area are reserved for existing residents and property owners who have been paying for these supplies all along, should CCL desire a permanent firm source of water supply from the Agency for the parcels outside of the CLWA service area, it will need to annex that area into the CLWA service area.[2] The CLWA Annexation Policy, however, precludes processing an annexation of less than 250 acres. Therefore, in order for the CLWA to consider annexation of the parcels, CLWA will need to bundle an annexation application by CCL with another annexation application(s). The CLWA annexation process can require up to 5 or 6 years to complete.

14.4.6 Sewage Disposal

CCL does not have a sewer connection to a public sewage collection or disposal system. Sanitary facilities at the landfill office are connected to a septic system. Portable toilets are used for other areas of the landfill.

14.5 Potential Impacts

14.5.1 Thresholds of Significance

14.5.1.1 Public Services

Impacts to public services would be considered significant if the Proposed Project would result in the following:

- Interfere with existing or planned emergency response plans or emergency evacuation plans.
- Require additional staffing or equipment to maintain acceptable service ratios, response times, or other performance objectives.
- Substantially degrade the level of service of existing fire protection, police protection, and schools, parks, or other public facilities.

2 Among the terms and conditions for annexation is the requirement that an annexing party provide additional reliable water supplies to avoid adversely impacting existing water supplies.

14.5.1.2 Utilities

Impacts to utilities would be considered significant if the Proposed Project would result in the following:

- Require the expansion of existing utility (e.g., water, sewer, electrical, natural gas, telephone) infrastructure or additional staff to maintain acceptable levels of service.
- Substantially degrade the level of service for utilities below established or acceptable levels.
- Have insufficient water supplies available to serve the project from existing and planned entitlements such that new or expanded entitlements would be needed.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

14.5.2 Proposed Project

This public services and utilities analysis evaluates the potential impacts that could result to public services and utilities from the Proposed Project.

14.5.2.1 Police Protection

Site security would continue to be provided by CCL, which includes separate onsite security measures including controlled access and security lighting. The Proposed Project would not interfere with existing or planned emergency response plans nor diminish the ability of police service personnel to respond to emergencies because the facility would be serviced and maintained by existing staff. Consistent with the existing CCL operation, the Los Angeles County Sheriff's Department would be called on in case of a security emergency. Therefore, potential impacts resulting from the Proposed Project, related to police protection services, would be less than significant.

14.5.2.2 Fire Protection

Landfills may experience minor fires. These minor fires are usually caused by the dumping of "hot loads" into the landfill. Hot loads occur when smoldering materials (e.g., coals) are present in an enclosed container such as a collection vehicle, and are re-ignited when stirred by dumping. Ashes may also restart fires if not covered promptly. Small fires are handled by onsite personnel. To date, there have been no minor onsite occurrences requiring the assistance of the Los Angeles County Fire Department.

If burning wastes are received, they would be deposited in a safe area and extinguished. If burning wastes have been placed in an active face, they would be immediately excavated, spread, and extinguished.

Landfill fires can also be caused by uncontrolled LFG (methane), which is produced by the decomposition of organic refuse. The flammable gas can migrate to the surface of a landfill and be released into the atmosphere if not collected. LFG emissions are controlled by operational practices, including sufficient cover and repair of cracks, fissures, and settling, and an LFG extraction system. An LFG extraction system, with a flame arrestor in the flare station, is in place at CCL. The system operates 24 hours a day and collects LFG, which is drawn from the landfill. The LFG is currently fed into a flare station for combustion or conveyed to a landfill gas-to-energy plant.

Consistent with the existing CCL operation, fire protection would be provided by the County of Los Angeles Fire Department and would not require additional personnel. The Proposed Project would not interfere with existing or planned emergency response plans nor diminish the ability of fire service. Therefore, because the Proposed Project would not directly or indirectly affect existing County of Los Angeles Fire Department facilities and personnel, potential impacts are considered less than significant.

14.5.2.3 Schools, Parks, or Other Public Facilities

The Proposed Project would add approximately 25 full-time staff at CCL, for a total of approximately 50 full-time staff. The increase in staff is expected to be met by local persons and would not induce population growth in the area. Consequently, the Proposed Project would not require additional facilities or staffing of existing community facilities, nor would it interfere with existing or planned emergency response plans or diminish the level of service for existing community facilities. Therefore, potential impact resulting from the Proposed Project, related to schools, parks, or other public facilities, would be less than significant.

14.5.2.4 Energy Systems

The Proposed Project would utilize existing electrical supplies available from existing transmission lines. Therefore, the Proposed Project would result in no impact to energy systems at or in the vicinity of the landfill.

Relocation of SCE's existing Saugus-Elizabeth Lake-Fillmore 66 kV Subtransmission Line within the landfill property would not result in impacts related to the expansion of utility infrastructure to maintain acceptable levels of service or degrade the level of service.

14.5.2.5 Water Supply

Water for dust control and irrigation at CCL is provided by an offsite irrigation well and drinking water is provided to employees by a bottled water distributor.

The demand for non-potable water at CCL would approximately double, for a total demand of about 150 afy. The 73-afy increase in demand, over the 2009 through 2013 average, would be negligible compared with the current water demand in the VWC service area, and VWC has sufficient water supplies to support this increase in the future. The WSA prepared for the Proposed Project states that the total municipal demand for water (imported, groundwater, and non-potable) in the VWC system was approximately 70,000 acre-feet in 2009. The 73-acre-foot increase in water for the Proposed Project is approximately ten hundredths of a percent of the total municipal water demand. This minor increase would not substantially deplete the groundwater supply, should that be the source, and any impacts on water supplies would be less than significant. VWC would not need to construct any new facilities to supply water to the Proposed Project. Moreover, when recycled water is available in the vicinity of landfill, it will be used for the non-potable water demand at CCL, thus reducing the demand for potable water supplies. Recycled water supplies are expected to be available in the project vicinity at the time of the completion of the Newhall Ranch Project's recycled water infrastructure. VWC has indicated in its WSA that "total existing and projected water supplies will meet the water demands associated with the Project in combination with existing and other planned uses within Valencia's service area."

Therefore, impacts to the public water utility system resulting from the Proposed Project would be less than significant.

14.5.2.6 Sewage Disposal

CCL utilizes a septic tank to manage domestic waste. There would be no discharge to existing sewer systems associated with the Proposed Project. Portable toilets would be used throughout the site, and the sanitary wastes would be hauled from CCL for appropriate disposal. Sanitary wastes generated by the portable toilets would have a negligible effect to a sanitary disposal system. Therefore, there would be no impacts to the public sewer systems.

14.6 Mitigation Measures

No significant impacts to public services and utilities resulting from the Proposed Project are anticipated; therefore, no mitigation measures are required.

14.7 Significance After Mitigation

The Proposed Project would result in less-than-significant impacts without mitigation.

14.8 Cumulative Impacts

14.8.1 Potential Cumulative Impacts

The cumulative projects discussed in Chapter 3.0 may result in significant impacts to public services and utilities. A combination of residential, commercial, open space, public, and industrial uses are planned within the vicinity of the Proposed Project. However, it is anticipated that each of the identified projects would incorporate mitigation measures to ensure that impacts to public services and utilities are less than significant.

The analysis provided above in Section 14.5 shows that the Proposed Project would not result in a significant impact to public services and utilities. Likewise, the Proposed Project, when combined with reasonably foreseeable projects in the project vicinity, is not expected to incrementally contribute to cumulative impacts to public services and utilities.

14.8.2 Mitigation Measures Required for Cumulative Impacts

No cumulative impacts would result from the Proposed Project; therefore, no mitigation measures are required.

CHAPTER 15.0

Visual Resources

15.1 Introduction

This chapter describes visual resources in the vicinity of Chiquita Canyon Landfill (CCL) and assesses potential visual resources impacts as a result of the CCL Master Plan Revision (Proposed Project). Because there are a number of photo simulations for this visual resources chapter, all figures have been placed at the end of the chapter to facilitate simulation comparisons.

15.2 Methodology

Visual or aesthetic resources (visual resources) are generally defined as the natural and built features of the landscape that can be seen. The combination of landform, water, and vegetation patterns represent the natural landscape features that define an area's visual character, while built features such as buildings, roads, and other structures reflect human or cultural modifications to the landscape. These natural and built landscape features or visual resources contribute to the public's experience and appreciation of the environment. Visual resources impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

The analysis is based on field reconnaissance in the vicinity of the landfill, review of site photographs and grading plans, and evaluation of computer-generated simulations of the project site as it would appear with the physical changes that would be brought about by implementation of the Proposed Project.

15.3 Regulatory Setting

The visual resources regulatory setting for the Proposed Project is derived from the County of Los Angeles General Plan, the Santa Clarita Valley Area Plan, and the Castaic Area Community Standards District (CACSD). Goals and policies from these documents relative to visual resources are described below.

15.3.1 County of Los Angeles General Plan (General Plan)

The County of Los Angeles General Plan was adopted November of 1980, with subsequent adoption dates. The General Plan consists of the following elements: General Goals and Policies, Conservation and Open Space, Land Use, Housing, Transportation, Path of Bikeways, Water and Waste Management Element, Economic Development, Safety, Noise, Scenic Highway, and Regional Recreation Areas. Los Angeles County is currently preparing a comprehensive General Plan update with adoption anticipated in 2013.

The Scenic Highway Element of the General Plan identifies the section of State Route 126 (SR-126) south of CCL, between Interstate 5 (I-5) and Ventura County as a First Priority scenic route, proposed for further study. In part, proposed scenic routes are intended to identify routes that traverse areas of scenic quality and interest and entry routes to the county that have substantial scenic value. Nothing in the General Plan Scenic Highway Element restricts development along First Priority scenic routes.

15.3.2 Santa Clarita Valley Area Plan

The majority of the Proposed Project is designated as Hillside Management (HM) on the Santa Clarita Valley Area Plan Land Use Map. In addition to HM, the southeastern part of the Proposed Project is designated as Industry (M) in the Santa Clarita Valley Area Plan. Relative to visual resources, the plan implies that industrial uses should be visually attractive.

The Scenic Highways Plan of the Santa Clarita Valley Area Plan reiterates the designation of the portion of SR-126 south of CCL as a First Priority scenic route. This designation does not preclude development. Also, the

Santa Clarita Valley Area Plan, with the exception of the First Priority Route designation of SR-126, does not specify any issues or policies that pertain directly to the aesthetics of the Proposed Project.

15.3.3 Castaic Area Community Standards District

The CACSD was established in part to protect the rural character, unique appearance, and natural resources of the Castaic area. The existing communities included in the CACSD are Castaic, Castaic Junction, Val Verde, Hasley Canyon, Hillcrest, and Paradise Ranch; the canyons of Charlie, Tapia, Romero, Sloan, and Violin; it also includes the Valencia Commerce Center, the Peter Pitchness Detention Center, the Northlake development, and part of Newhall Ranch (CACSD, 2004). CCL is located on the border of the Castaic and Val Verde areas. Specific to visual resources, the CACSD has community-wide development standards for significant ridgeline protection. These include development restrictions on significant ridgelines. None of the ridgelines designated as significant by the CACSD will be affected by the Proposed Project.

15.4 Regional Setting

CCL is located in the northwestern portion of unincorporated Los Angeles County and is approximately 3 miles west of the I-5 and SR-126 junction (Figure 1-1). CCL is also located approximately 7 miles northwest of the city of Santa Clarita, 33 miles northwest of Downtown Los Angeles, and 18 miles east of the city of Fillmore. Open floodplain and the Santa Clara River are present south of CCL across SR-126.

15.5 Local Setting

Figure 15-1 shows the local setting of CCL. SR-126 runs east-west along the southern border of the landfill; Chiquito Canyon Road runs north-south along the western edge of CCL, separated by a significant ridgeline. The community of Val Verde is located to the northwest of CCL; the industrial/commercial Commerce Center is located to the northeast of the landfill; and a United States Postal Service facility is located to the east of the landfill. The property immediately west and south of the landfill is owned by the Newhall Land and Farming Company (NLF) and is currently either vacant or used for agricultural activities.

CCL is located along the western edge of the Santa Clarita Valley, in the Transverse Mountain Range. Topographically, the site is characterized by steep-sided slopes approaching 1:1 horizontal:vertical along two principal canyons. Chiquita Canyon, the main canyon, is generally oriented northeast-southwest, and the eastern canyon, where landfill extension is proposed, is oriented northwest-southeast. In the as-yet undeveloped areas onsite, the ridgelines rise from 300 to 600 feet above the canyon floors. In some areas, previous landfilling has reduced the length of some slopes and has resulted in a more gentle terrain.

Landfill operations at CCL have been ongoing since 1972. From within the project site, CCL looks like an operating landfill, with maintenance and operations facilities, paved and unpaved roads, heavy equipment, active landfill areas with exposed liner, and a landfill working face. From outside the site, current landfill operations are screened from most views.

CCL encompasses a total of 639 acres. The existing permitted waste footprint is approximately 257 acres, but not all of the 257 acres has been developed. Onsite disturbance is generally concentrated in the central portion of the property. Currently undisturbed acreage consists of steep canyons with cover characterized by coastal sage scrub, chaparral, and non-native grassland. Also, due to ongoing landfill activities, there are several areas of graded and revegetated landfill onsite. These areas have been revegetated with native species of brittlebush, California sagebrush, and California buckwheat.

On the project site, several buildings are used to support landfill operations and include an administrative office, a scale house at the front gate, and a maintenance building used for vehicle maintenance and storage. Generally, the buildings are located in the southern portion of the site near the entrance to the landfill. Other site improvements include a landfill gas collection system on both closed and active landfill areas, a landfill gas-to-energy (LFGTE) facility, a flare station, and water storage tanks.

15.5.1 Surrounding Landscape Context

Much of the area surrounding CCL is characterized by steep topography and remains as open, undeveloped land. Surrounding land uses include mostly open lands to the north; rural residential development is located to the west and northwest along Chiquito Canyon Road and in the Val Verde area, respectively. Relatively new suburban residential areas are located to the northeast. The closest of the dwellings in these residential areas are located approximately 500 feet from the northwest site boundary corner and 1,200 feet from the landfill footprint, but because of the intervening topography, the operating landfill is not visible from these locations. Industrial/commercial uses are located to the northeast, east, and southeast. The United States Postal Service General Mail Facility is located adjacent to the eastern edge of the landfill property boundary. The property immediately west and south of the landfill is owned by NLF and is currently either vacant or used for agricultural activities. Oil extraction fields and associated storage areas are located less than 1 mile from the landfill to the west and south. Valencia Travel Village, a short- and long-term recreational vehicle resort, is located approximately 1 mile east of the landfill on the south side of SR-126.

15.5.2 Potential Visibility of the Proposed Project and Selection of Key Observation Points

Close and long range views of CCL are limited because of the steep intervening topography that surrounds the site. To determine whether the areas of landfill that would be permitted under the Proposed Project would be visible to viewers in the area surrounding the site, and the extent to which they would be visible, a viewshed analysis was conducted. This analysis made use of computer-based geographic information system tools to identify the areas in the project vicinity from which the areas of fill proposed under the Proposed Project would have the potential to be visible. These areas were compared against the areas where large numbers of potential viewers would be concentrated. The results of this analysis are summarized below in terms of the Proposed Project's potential to be seen in nearby areas with substantial numbers of potential viewers.

Based on the results of the viewshed analysis, a number of key observation points (KOP) were identified. To help assess the aesthetic impacts of proposed projects, it is a standard practice to identify viewpoints referred to as KOPs that provide views toward the project site that are sensitive and/or representative. Photographs taken of the views from these locations provide the basis for documenting and evaluating existing visual conditions, and also serve as a base for the preparation of simulations that depict the completed project as it would appear in the view. An effort was made to identify sensitive receptors[1] and viewing areas that would be the most sensitive to the Proposed Project's potential visual impacts.

A total of seven KOPs were selected for analysis of the Proposed Project, and the locations of these viewpoints are indicated in Figure 15-1. A description of the general areas with views of CCL is provided in the following sections, along with identification of associated KOPs and the basis for their selection.

Residential Area North and East of Hasley Canyon Road

The expanded landfill would be visible from public roads and from a small number of single-family residences in the new subdivisions located in the elevated areas north and east of Hasley Canyon Road. KOP 1 (Figure 15-2) was selected to represent the views from this area.

State Route 126

A range of views of the expanded landfill would be available from SR-126. To evaluate the Proposed Project's potential effects on views from SR-126, three KOPs were selected (KOPs 2, 4, and 5 shown in Figures 15-3, 15-5, and 15-6, respectively). The locations of these viewpoints are indicated in Figure 15-1. KOP 3 (also provides views that are generally representative of views from nearby segments of the highway.

[1] Typically, residents and recreationists are considered to be sensitive receptors to change in the landscape. This is because of the potential for effects to their long-term views or their enjoyment of a particular landscape or activity.

Valencia Travel Village

Valencia Travel Village is a recreational vehicle (RV) resort located along the south side of SR-126, between the landfill entrance and I-5. Valencia Travel Village represents the current primary location in the landfill vicinity from which stationary public and residential views of the existing landfill are now available and would continue to be available with the Proposed Project. KOP 3 (Figure 15-4) was selected to represent views from this area.

Chiquito Canyon Road

Chiquito Canyon Road is a roughly north-south roadway located to the west of CCL. The expanded landfill would be visible to varying degrees from this road. KOPs 6 and 7 (Figures 15-7 and 15-8) were selected to represent views from this area.

North and Northwest of Chiquita Canyon Landfill

Existing residential areas, including the community of Val Verde, are located to the north and northwest of CCL. The existing landfill is not currently visible from these areas, and the viewshed analysis indicates that the proposed landfill expansion would not be visible.

Character Photo 1 (Figure 15-9) was established northwest of CCL, in the community of Val Verde at the intersection of Chiquito Canyon Road and San Martinez Road, facing southeast toward CCL. Despite the proximity of Val Verde to CCL, steep slopes and vegetative screening limit views of the existing and expanded landfill from Val Verde.

Character Photo 2 (Figure 15-9) was established north of CCL, in a rural residential area at the intersection of Sloan Canyon Road and Hasley Canyon Road, facing south-southeast toward CCL. Again, steep slopes and vegetative screening between this residential area and CCL preclude views of the existing and expanded landfill from this area.

Character Photo 3 (Figure 15-10) was established north of CCL, at the intersection of Hasley Canyon Road and Del Valle Road, looking south-southwest toward CCL. Like Character Photos 1 and 2, steep slopes and vegetative screening between this viewpoint and CCL preclude views of the existing and expanded landfill from this area.

Because there are no views of the existing or expanded CCL from areas to the north and northwest of the landfill, and because landfill development would not result in future views, potential visual impacts from this area are not discussed further in this chapter.

15.5.3 Assessment of Existing Scenic Quality

Existing views from each of the KOPs were photo-documented in June 2012. The photos were taken with a single-lens reflex digital camera set to take photographs equivalent to those taken with a 35-millimeter (mm) camera using a 48-mm focal length (view angle 40 degrees). Page-size photographs are presented to represent the existing conditions from the KOPs. Additional information about analysis procedure and the creation of photo simulations is included in Section 15.6.1.

To assess the scenic quality of the landscapes potentially affected by the Proposed Project, the analyses of the views toward the project site from each of the viewing areas includes an overall rating of the level of scenic quality prevailing in the views for the existing condition. These ratings were developed based on the field observations made in June 2012, review of photographs of the affected area, review of methods for assessment of visual quality, and review of research on public perception of the environment and scenic beauty ratings of landscape scenes. The final assessment of scenic quality was made based on professional judgment that took a broad spectrum of factors into consideration, including:

- Natural features, including topography, water courses, rock outcrops, and natural vegetation
- The positive and negative effects of manmade alterations and built structures on visual quality

- Visual composition, including assessment of the vividness, intactness, and unity of patterns in the landscape[2]

The final assigned ratings fit within the rating scale summarized in Table 15-1. This scale was built using a scale originally developed for use with an artificial intelligence system for evaluation of landscape visual quality (Buhyoff et al., 1994) and incorporates landscape assessment concepts applied by the United States Department of Agriculture (USDA) Forest Service and the United States Department of Transportation Federal Highway Administration (FHWA).

TABLE 15-1
Landscape Scenic Quality Scale

Rating	Explanation
Outstanding Visual Quality	A rating reserved for landscapes with exceptionally high visual quality. These landscapes are significant nationally or regionally. They usually contain exceptional natural or cultural features that contribute to this rating. They are what we think of as “picture postcard” landscapes. People are attracted to these landscapes to view them.
High Visual Quality	Landscapes that have high quality scenic value. This may be due to cultural or natural features contained in the landscape or to the arrangement of spaces contained in the landscape that causes the landscape to be visually interesting or a particularly comfortable place for people. These landscapes have high levels of vividness, unity, and intactness.
Moderately High Visual Quality	Landscapes that have above average scenic value but are not of high scenic value. The scenic value of these landscapes may be due to manmade or natural features contained within the landscape, to the arrangement of spaces in the landscape, or to the two-dimensional attributes of the landscape. Levels of vividness, unity, and intactness are moderate to high.
Moderate Visual Quality	Landscapes that are common or typical landscapes that have average scenic value. They usually lack significant manmade or natural features. Their scenic value is primarily a result of the arrangement of spaces contained in the landscape and the two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are average.
Moderately Low Visual Quality	Landscapes that have below average scenic value but not low scenic value. They may contain visually discordant manmade alterations, but these features do not dominate the landscape. They often lack spaces that people will perceive as inviting and provide little interest in terms of two-dimensional visual attributes of the landscape.
Low Visual Quality	Landscapes that have below average scenic value. They may contain visually discordant manmade alterations, and often provide little interest in terms of two-dimensional visual attributes of the landscape. Levels of vividness, unity, and intactness are below average.

Note: Rating scale based on Buhyoff et al., 1994; FHWA, 1988; and USDA Forest Service, 1995.

15.5.4 Existing Visual Conditions in Chiquita Canyon Landfill Viewing Areas

KOP 1: Residential Area East of Hasley Canyon Road

Figure 15-2a depicts a view toward CCL from a road in the relatively new single-family subdivision in the elevated area to the east of Hasley Canyon Road, along Alton Way. At present, the landfill is not visible from this location, but this view is representative of views toward CCL from the roads and homes in this area from which the Proposed Project has the potential to be seen.

As seen in Figure 15-2a, a road and residences in the subdivision dominate the foreground of the view. Buildings that are part of the commercial development in Commerce Center can be seen the middleground of

[2] Vividness is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern. Intactness is the integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment. Unity is the degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony of intercompatibility between landscape elements. (FHWA, 1988)

the view. The middleground also consists of the ridgelines along the northeast side of CCL. Distant ridgelines are visible in the background.

The subdivision has an attractive and ordered appearance; the colors, materials, and landscaping of the homes in the community work well with the natural-appearing hillsides and ridgelines seen in the middleground. However, the rectangular and hard-surfaced forms of the Commerce Center development are visually intrusive and reduce the vividness, intactness, and unity of the view. The result is a moderately low level of scenic quality. Because the potential viewers from this neighborhood are residential and stationary, the visual sensitivity from KOP 1 is considered to be high.

KOP 2: Intersection of State Route 126 and Commerce Center Drive

Figure 15-3a is a representative existing view of CCL from the southeastern corner of the intersection of SR-126 and Commerce Center Drive. The existing landfill is visible in the dip in the ridgeline on the eastern side of CCL that can be seen in the middleground in the center of this view. The foreground of the view is dominated by the roadway and by the construction of an industrial/commercial property on the northwestern corner of the intersection. The Commerce Center development and canyon ridgelines flanking the landfill can be seen in the middleground, and ridgelines located west of CCL are visible in the distance.

The undeveloped hillsides and ridgeline visible to the left and right of the existing landfill area are visually pleasing and provide a moderate level of visual interest. The area of densely developed commercial buildings in the middleground of the view has an orderly appearance, but the color and forms of the structures create a high level of contrast with the undeveloped areas behind them in the view. The foreground of the view is dominated by the roadway, traffic signal equipment, utility pole and lines, and construction activities. These manmade features, along with the tall transmission structure on the ridgeline that is silhouetted against the sky and the area of excavation and fill associated with the current landfill operation, contrast with the overall landscape and reduce its degree of visual intactness and unity. When considered as a whole and evaluated in terms of the landscape scenic quality scale presented in Table 15-1, the overall level of visual quality of this view is moderately low.

Commerce Center is an important local industrial park, and one of the main access routes to the development is via SR-126 and Commerce Center Drive. In addition to travelers accessing Commerce Center, the state route carries a very high volume of traffic on a daily basis; the view of CCL from KOP 2 would be seen by approximately 22,000 motorists per day (Caltrans Traffic and Vehicle Data Systems Unit, 2011). SR-126 is a First Priority scenic route, though no specific plans or policies have been put in place to preserve specific scenic features or qualities. Therefore, the sensitivity of the view from this intersection is moderate to moderately high, because it will be seen for brief periods of time by large numbers of travelers as they wait at the traffic signal at this intersection.

KOP 3: Valencia Travel Village

Figure 15-4a is an existing view of CCL from the entrance of Valencia Travel Village, which is located along the southern edge of SR-126. Valencia Travel Village is an RV resort with stationary public and residential views of the existing landfill. The RV resort has 381 sites, as well as recreational facilities for the short- and long-term residents (Valencia Travel Village, 2012).

This view may be considered typical from within Valencia Travel Village, although structures and RVs would likely block many views from within the resort park. The existing landfill is not visible from this location. SR-126 is visible in the foreground; the middleground consists of rocky canyon walls, undeveloped lands, part of Commerce Center, and the canyon ridgeline in the far middleground.

The hillsides in the middleground are visually pleasing, but SR-126 and the Commerce Center development are contrasting and somewhat discordant elements in the view, which reduce its intactness and unity. As a consequence, this view has a moderately low level of scenic quality. Because the potential viewers from Valencia Travel Village are stationary recreational and residential viewers, the visual sensitivity of this location is high.

KOP 4: Wolcott Way at State Route 126

Figure 15-5a is an existing view of the intersection of Wolcott Way and SR-126 from the NLF lands on the south side of SR-126. This intersection is the location of the proposed new entrance for CCL. Wolcott Way currently ends at the base of the hillside that frames the view.

As seen in Figure 15-5a, the top of the Primary Canyon fill area, closed since 1989, is slightly visible above the ridgeline in the foreground. The fill area is discernible by the low evenly spaced trees along its crest. The foreground of the view is dominated by SR-126 and Wolcott Way, with the hillsides framing the view in the far foreground. The hillsides are visually pleasing, but the view is diminished by the roadway, traffic signal equipment, and power pole in the foreground, as well as the transmission tower visible on the ridgeline. These contrasting alterations of this landscape decrease the intactness and unity of the view. However, because of the hillsides, this landscape exhibits a moderately high level of vividness. Therefore, the overall scenic quality of this view is moderate. Currently, this intersection is not heavily used, as it only provides access to the NLF property, which is now being used for agricultural purposes.

KOP 5: Eastbound State Route 126

Figure 15-6a depicts a representative existing view looking toward CCL from eastbound SR-126 at a point west of the landfill entrance. The landfill site is located beyond the hillsides visible along the highway in this view, but the existing landfill is not visible from this location. The natural-appearing hillsides and SR-126 are both dominant elements in this view.

The hillsides are visually pleasing, but are not highly distinctive. Thus the level of vividness of this view is average or moderate. The visual unity and intactness of this view are reduced by the visual dominance of the roadway and the presence of a skylined transmission tower. Overall, this view has a moderate level of visual quality. SR-126 is a First Priority scenic route that carries high volumes of traffic; however, because travelers along this segment of the highway are moving at high speeds, this view is visible for only brief periods of time. The overall visual sensitivity of this view is moderate.

KOP 6: Chiquito Canyon Road

Figure 15-7a depicts a representative view looking northeast toward CCL from the southern portion of Chiquito Canyon Road, approximately 0.4 miles north of SR-126. The landfill is located beyond the hills that frame the valley through which Chiquito Canyon Road travels, and a portion of the fill area is located beyond the low, evenly spaced trees along the crest of the ridgeline.

The remnants of an old fence along the roadside and a small number of large trees in an otherwise open, generally flat valley are visible in the foreground of the view. A naturally vegetated hillside and a row of trees along the ridgeline are present in the middleground. A more distant ridgeline is visible in the middleground on the left-hand side of the view.

Although the elements of this view are pleasing, they are not distinctive, so the level of vividness of the view is moderate. The visual unity and intactness of the view are diminished somewhat by the artificial-appearing line of trees along the ridgeline. The overall visual quality of this view is moderate. The visual sensitivity of this view is low in that it would be visible for short periods of time, somewhat outside the primary cone of vision of travelers on Chiquito Canyon Road.

KOP 7: Chiquito Canyon Road

Figure15-8a is a second representative view toward CCL from Chiquito Canyon Road. This photograph was taken at a location north of KOP 6, approximately 0.7 miles south of Val Verde. The landfill is not currently visible from this KOP.

Similar to KOP 6, the primary elements visible in the near foreground of KOP 7 include the road and roadside, open grassland dotted by a small number of large trees, and riparian vegetation along a stream. The far foreground and middleground are dominated by naturally vegetated hillsides.

The open valley and hillside in this view are visually pleasing; however, this landscape is not distinctive, and thus the level of vividness is moderate. Aside from the roadside in the near foreground, no manmade features are visible from this view, resulting in a moderately high level of visual unity and intactness. The overall visual quality of this view is moderate. The visual sensitivity of this view is low in that it would be visible for short periods of time, somewhat outside the primary cone of vision of travelers on Chiquito Canyon Road.

15.6 Potential Impacts

15.6.1 Analysis Procedure

This analysis of the visual effects of changes that would be brought about by the Proposed Project is based on systematic comparison of the existing conditions seen in the views from each of the KOPs with photo simulations that depict the visual conditions that would exist in the views from each KOP after final landfill closure and revegetation. Preparation of the photo simulations started with the photos representing the existing, “before” condition views from each of the KOPs. Then, a systematic and rigorous procedure was followed to prepare the simulations using computer modeling and rendering techniques. Existing topographic and site data provided the basis for developing an initial digital model. The project engineers provided site plans and digital data for the final grading plans. These were used to create three-dimensional (3-D) digital models of the Proposed Project. These models were combined with the digital site model to produce complete computer models of the Proposed Project.

For each viewpoint, viewer location was captured using global positioning system (GPS) equipment capable of capturing data with submeter accuracy (Trimble GeoXT), using 5 feet as the assumed eye level. Computer “wire frame” perspective plots were then overlaid on the photographs of the views from the viewing points to verify scale and viewpoint location. Digital visual simulation images were produced as a next step based on computer renderings of the 3-D model combined with high-resolution digital versions of base photographs. The surfaces of the fill slopes were rendered to emulate the vegetative conditions on adjacent slopes. The final “hard copy” visual simulation images that appear in this Draft Environmental Impact Report (DEIR) were produced from the digital image files using a color printer. These images are accurate within the constraints of the available site and project data. For each of the KOPs, the existing views and the simulated views of the project after landfill closure and vegetation are presented in Figures 15-2 through 15-8.

15.6.2 Standards of Significance

Analysis of the Proposed Project’s impacts was based on evaluation of the changes to the existing visual resources that would result from construction and operation of the landfill under the Proposed Project. In making a determination of the extent and implications of the visual changes, consideration was given to:

- The specific changes in the affected visual environment’s composition, character, and any specially valued qualities
- The context of the affected visual environment
- The extent to which the affected environment contains places or features that have been designated in plans and policies for protection or special consideration
- The numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the likely changes

Significance criteria for impacts to aesthetic resources were developed from *California Environmental Quality Act (CEQA) Guidelines* and the CEQA Checklist to evaluate the potential environmental impacts to the Proposed Project. The following criteria were applied:

- Would the project have a substantial adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

15.6.3 Changes Associated with the Proposed Project

Figure 2-3 of Chapter 2.0, Project Description, shows the proposed changes associated with the Proposed Project. These changes include development of a new landfill entrance at Wolcott Way, including support and administrative facilities, and extension of the landfill footprint into the East Canyon and to the south.

Figure 2-7 shows the fill sequence plan for the Proposed Project. Fill activity would move southward from the existing permitted fill area into the South Footprint, and then move into East Canyon. Section 2.2.5.7 of this DEIR describes existing disposal and cover procedures for the existing landfill, as well as which procedures would continue through the life of the expanded landfill. Specifically, the work area over which refuse is spread is minimized to control odor and litter. Additionally, the refuse is covered daily with a layer of compacted soil or alternative daily cover. Water is applied to suppress dust, and litter control measures are implemented. Because landfill operation could be conducted 24 hours per day, night lighting will be required, similar to the current operation. An increase in the overall level of lighting is not expected, because the new landfill areas would be phased and the active filling in each area at any one time would be restricted to a relatively small portion of the larger area. However, as the landfill fills and increases in height, the active working face will be at a higher elevations, and thus the working face and the night lighting associated with it will have the potential to be more visible. Staging, equipment storage, and construction material storage would be located in places that have no direct visual access from surrounding areas.

Throughout the life of the project, prior to final landfill closure, landfill cell construction and ongoing landfill operational activities onsite would be visible from surrounding areas, in particular westbound SR-126 (KOP 2), Valencia Travel Village (KOP 3), Wolcott Way at SR-126 (KOP 4), and Chiquito Canyon Road (KOPs 6 and 7). Two primary project elements would change the visual landscape of CCL: the new entrance and landform alteration in the form of the waste footprint extension.

New Entrance

As shown in Figure 2-3 of Chapter 2.0, Project Description, the Proposed Project includes the development of a new site entrance at Wolcott Way. Entrance construction would likely occur immediately upon project approval, and would take approximately 10 months to complete. By developing the new entrance early in the project, fill activities could commence to the south. Construction of the new entrance would require hillside grading and fill activity. A berm and screening wall would also be constructed so that entrance facilities would be screened from view. A combination of berm and wall would extend along the west side of Wolcott Way, along the entire access road as it parallels SR-126, and across the existing landfill entrance. The berm and area between the berm and roadways would be landscaped with native grasses, shrubs, and trees.

The Proposed Project would extend the operational life of CCL to site capacity, after which time it would close. Upon closure of the landfill, the new entrance would remain open and maintained to support onsite facilities that would continue operating past the landfill closure date, such as the compost operation and LFGTE plant.

Landform Alteration

The Proposed Project will increase the permitted landfill waste footprint within the existing property line by approximately 143 acres by extending it slightly south toward the existing landfill entrance and to the north and east, as shown in Figure 2-1 of Chapter 2.0, Project Description. The landfill waste footprint will increase from the currently permitted acreage, approximately 257 acres, to approximately 400 acres. The Proposed Project also will raise the permitted height of the landfill by 133 feet to a maximum elevation to of 1,573 feet.

Figure 2-7 of the Project Description shows the fill sequence plan for the Proposed Project. As shown, the first area to be filled as part of the Proposed Project would be to the south toward the existing landfill entrance.

Prior to construction in this area, the new entrance and associated facilities would need to be in place. Existing facilities at the existing entrance would be removed as needed. Extension of the waste footprint into East Canyon would occur after the area to the south is filled and closed.

The landfill areas shown in Figure 2-7 may be developed in phases, combined, or not developed sequentially. If the landfill is developed sequentially, the final cover and drainage facilities will be completed as the fill progresses. The surfaces of the fill slopes would be revegetated to emulate the vegetative conditions on adjacent slopes using native vegetation.

The post-closure end-use of the landfill areas will be consistent with the surrounding terrain and vegetation, land uses, and zoning. At closure, it is currently proposed that the landfill be maintained as a non-irrigated open space area.

15.6.4 Proposed Project Potential Impacts

This section evaluates the potential significance of impacts according to the evaluation criteria outlined in Section 15.6.2. Where additional detail is necessary, impacts are evaluated for each KOP.

15.6.4.1 Evaluation Criteria: Would the project have a substantial adverse effect on a scenic vista?

There are no formally or informally designated scenic vistas within the Proposed Project area or with a view of the area. Consequently, the Proposed Project would not have the potential to have a substantial adverse effect on a scenic vista. No impact would occur from implementation of the Proposed Project, and no mitigation would be required.

15.6.4.2 Evaluation Criteria: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no designated state scenic highways within the Proposed Project area. Consequently, the Proposed Project would not have the potential to substantially damage scenic resources (including trees, rock outcroppings, and historic buildings) within a state scenic highway. No impact would occur from implementation of the Proposed Project, and no mitigation would be required.

15.6.4.3 Evaluation Criteria: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

KOP 1: Residential Area East of Hasley Canyon Road

Figure 15-2b is a visual simulation of the view of CCL from the residential area east of Hasley Canyon Road after the landfill has closed. The Proposed Project fill area would be visible above the easternmost ridgeline. The new entrance is not visible from this viewpoint. Nearly no short-term operation activity would be visible from this location, although it is possible that immediately prior to closure, construction vehicles would be visible just beyond the easternmost ridgeline. This activity is anticipated to be very brief in duration and marginally visible.

Because the new entrance is not visible from this viewpoint, there would be no views of short-term construction activities related to construction of the new entrance. Since short-term construction associated with operation activity is anticipated to be very brief in duration and marginally visible, these short-term visual impacts are not anticipated to be significant. Therefore, the potential short-term visual impacts as a result of the Proposed Project would be less than significant. No mitigation would be required.

After the closure of CCL, the presence of the fill area in the view would create a partial but not dominating change in the landscape. While the level of vividness, intactness, and unity would be slightly diminished from the existing condition, the fill area would create a relatively small change on the landscape and would not represent a substantial decrease in visual character or scenic quality. The scenic quality of the view would remain moderately low.

Therefore, the potential long-term visual impacts as a result of the Proposed Project would be less than significant from the residential area east of Hasley Canyon Road. No mitigation would be required.

KOP 2: Intersection of State Route 126 and Commerce Center Drive

Figure 15-3b is a visual simulation of the view of CCL from the intersection of SR-126 and Commerce Center Drive after the landfill has closed. The Proposed Project fill area would be visible in the ridgeline dip from this KOP. The new entrance would not be visible from this viewpoint. Operation activity potentially would be visible from this location, prior to landfill closure once fill activity in the easternmost portion of the East Canyon extends above the level of the ridgeline. Because the new entrance would not be visible from this viewpoint, there would be no views of short-term construction activities related to construction of the new entrance. And while operation activity potentially would be visible from this location, these impacts are not anticipated to be significant. Therefore, the potential short-term visual impacts as a result of the Proposed Project would be less than significant. No mitigation would be required.

After the closure of CCL, the presence of the fill area in the view would alter the view's character by blocking distant ridgelines. The uniformity of the landfill would contrast with the ruggedness of the surrounding hills and ridgelines. The level of vividness, intactness, and unity would be diminished from the existing condition, but these changes would not represent a significant change in the existing overall scenic quality of this view, which would remain moderately low.

Therefore, the potential long-term visual impacts as a result of the Proposed Project would be less than significant from KOP 2. No mitigation would be required.

KOP 3: Valencia Travel Village

Figure 15-4b is a visual simulation of the view of CCL from the entrance of Valencia Travel Village after the landfill has closed. The Proposed Project fill area would be visible from this KOP. The new entrance would not be visible from this viewpoint. Operation activity potentially would be visible from this location, prior to landfill closure once fill activity in the easternmost portion of the East Canyon extends above the level of the ridgeline.

Because the new entrance is not visible from this viewpoint, there would be no views of short-term construction activities related to construction of the new entrance. And while operation activity potentially would be visible from this location, these impacts are not anticipated to be significant. Therefore, the potential short-term visual impacts as a result of the Proposed Project would be less than significant. No mitigation would be required.

After the closure of CCL, the presence of the fill area in the view would alter the view's character by blocking the majority of the distant ridgelines, which have an appealing and visually interesting natural form. In addition to blocking the view toward the visually appealing distant ridgeline, the uniformity of the landfill form would contrast with the ruggedness of the surrounding hills and ridgelines. As a consequence, the level of vividness, intactness, and unity would be diminished from the existing condition. However, these changes would not be substantial enough to represent a significant change in the scenic quality of the view, which would remain moderately low.

Therefore, the potential long-term visual impacts as a result of the Proposed Project would be less than significant from Valencia Travel Village. No mitigation would be required.

KOP 4: Wolcott Way at State Route 126

Figure 15-5b is a visual simulation of the view of CCL from the intersection of Wolcott Way and SR-126 after construction of the new entrance has been completed. The only portion of the Proposed Project visible from this location would be the new entrance and associated berm and screening wall that would shield views of the entrance and support facilities from SR-126. Short-term construction activity associated with the new entrance would last for approximately 10 months and would potentially be very visible to travelers along SR-126. The berm would be landscaped with native grasses, shrubs, and trees. Figure 15-5 depicts native

grasses only, but native shrubs and trees are proposed to be planted in accordance with an approved landscape plan.

As Caltrans continues to refine the SR-126 widening design, it may be necessary to modify the entrance facility design. For example, a wall may replace the screening berm along the site frontage due to space constraints.

The graded hillsides northwest of Wolcott Way would be visible from KOP 4; however the appearance of the ridgeline would not change, as grading would occur only at lower elevations and visible peaks would be left intact. After construction of the new entrance has been completed, the change to the landform would represent a significant change to the intactness and unity of the view, diminishing the existing condition. These changes would represent a change in visual character and a change in the overall level of visual quality of the view from moderate to moderately low.

However, given the intense level of development in the landfill vicinity, this landform alteration is not anticipated to be out of scope or scale with surrounding development. Therefore, the potential short-term and long-term visual impacts as a result of the new entrance would be less than significant. No mitigation would be required.

There are no impacts associated with operation activity associated with the fill area at this location.

KOP 5: Eastbound State Route 126

Figure 15-6b is a visual simulation of the view of CCL from eastbound SR-126 after the landfill has closed. From this KOP, the Proposed Project fill area would be visible above the ridgeline. The new entrance would not be visible from this viewpoint, so short-term visual impacts related to construction of the new entrance would not be significant. Operation activity potentially would be visible from this location, prior to landfill closure once fill activity in the south westernmost portion of the South Canyon extends above the level of the ridgeline. This operation activity is anticipated to be relatively brief in duration and only marginally visible.

After the closure of CCL, the presence of the fill area in the view would create a negligible change in the landscape. The level of vividness, intactness, and unity would only be slightly diminished from the existing condition, and these changes would not represent a significant decrease in visual character and/or scenic quality. The overall level of scenic quality would remain moderate.

Therefore, the potential long-term visual impacts as a result of the Proposed Project would be less than significant from eastbound SR-126. No mitigation would be required.

KOP 6: Chiquito Canyon Road

Figure 15-7b is a visual simulation of the view of CCL from Chiquito Canyon Road after the landfill has closed. A very small portion of the Proposed Project fill area would be visible above the western ridgeline from this KOP. The new entrance would not be visible from this viewpoint, so short-term visual impacts related to construction of the new entrance would not be significant. Nearly no short-term operation activity would be visible from this location, although it is possible that immediately prior to closure, construction vehicles would be visible just beyond the westernmost ridgeline. This activity is anticipated to be very brief in duration and marginally visible.

Because the new entrance would not be visible from this viewpoint, there would be no views of short-term construction activities related to construction of the new entrance. And while operation activity potentially would be visible from this location, these impacts are not anticipated to be significant. Therefore, the potential short-term visual impacts as a result of the Proposed Project would be less than significant. No mitigation would be required.

After the closure of CCL, the visibility of a very small portion of the fill area in the view would create a negligible change in the landscape. The diminishment of the existing levels of vividness, intactness, and unity of the view would be very slight, and these changes would not represent a significant decrease in visual character and/or scenic quality. The overall level of scenic quality would remain moderate.

Therefore, the potential long-term visual impacts as a result of the Proposed Project would be less than significant from this location along Chiquito Canyon Road. No mitigation would be required.

KOP 7: Chiquito Canyon Road

Figure 15-8b is a visual simulation of the view of CCL from Chiquito Canyon Road after the landfill has closed. The Proposed Project fill area would be visible above the western ridgeline from this KOP. Visual contrast introduced by the fill area would be minimized by emulating the vegetation on adjacent slopes. The new entrance would not be visible from this viewpoint, so short-term visual impacts related to construction of the new entrance would not be significant. Operation activity potentially would be visible from this location, prior to landfill closure once fill activity in the westernmost portion of the South Canyon extends above the level of the ridgeline.

Because the new entrance would not be visible from this viewpoint, there would be no views of short-term construction activities related to construction of the new entrance.

In the current view, the natural ridgeline marks the boundary between earth and sky; however, after the closure of CCL, a portion of that boundary would instead be defined by the engineered fill of the Proposed Project. The uniformity of the landfill would contrast with the ruggedness of the surrounding hills and ridgelines.

While the level of vividness, intactness, and unity would be slightly diminished from the existing condition, the fill area would create a small change in the appearance of the landscape but would not represent a substantial decrease in visual character or scenic quality. The scenic quality of the view would remain moderate. Therefore, the potential long-term visual impacts as a result of the Proposed Project would be less than significant from Chiquito Canyon Road. No mitigation would be required.

15.6.4.4 Evaluation Criteria: Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

CCL is already illuminated at night, with lighting at the scale house, administration building, shop area, along the access road, and at the landfill working face. Lighting associated with the Proposed Project would be similar to the existing lighting at the site, and would not create a new source of substantial light or glare that would adversely affect day or nighttime views. In general, lighting would be limited to the minimum required, either for operations and safety (at facilities, along access roads, and at the working face) or by the County (at the site entrance). To a large degree, the lighting would be located in areas where it would not be visible to viewers offsite because of the screening provided by the site's topography and the berm that would be constructed along SR-126.

The lighting required by the Proposed Project is described in the following sections.

Site Entrance

The area along Wolcott Way between SR-126 and the site entrance would require street lighting. The light fixtures installed here would meet County standards and would be similar in design and appearance to lighting along SR-126 and at nearby commercial developments. Because this lighting would have full cutoff design and would be directed to the roadway, it would not constitute a new source of substantial light or glare that would create significant impacts.

Facilities

The project facilities would be located in the flat area at the base of the hill located west of Wolcott Way and north of SR-126. The lighting at these facilities would be limited, consisting of several low wattage fixtures on the administration building; pole lights and low wattage fixtures at the scale house and queuing lanes; and pole lights and low wattage fixtures at the shop area. All of these fixtures would be fully shielded and designed to direct the light downward and limit the illumination to the areas where it is needed. Because of the berm and screening wall that would be constructed along the eastern and southern sides of this area, this lighting would not be visible from areas outside the site.

Access Roads and Working Face

The roads on the site that provide access to the working face would be illuminated with light plants, that is, portable light arrays that are powered by portable generators. The lights on these arrays are mounted on a short tower and aimed at the roadway. The light plants would be placed where required, depending upon which area of the site needs to be accessed at the time. Light plants would also be used to illuminate the working face. There would be only one, relatively small, working face at any given time. Including the area that is required for vehicle turnaround, the illuminated area at the working face would be 300 yards by 300 yards, or approximately 2 acres. The light plants along the access road and at the working face would be aimed to light only the areas where illumination is needed, and would be turned on only when required for operational activities. Because light plants are currently used onsite to illuminate the access road and working face, the use of the light plants along the expanded landfill's access road and at its working face would not constitute a change in the existing lighting conditions.

Once activities at the working face extend above the level of adjacent ridgelines, there may be an increased potential for site lighting to be visible from nearby residential areas. In response, and in keeping with the Los Angeles County Rural Outdoor Lighting District Ordinance (also known as the Dark Skies Ordinance, and to which CCL is not subject), CCL will implement measures to reduce the potential for offsite lighting impacts. Specifically, when the working face is higher than surrounding ridgelines and the lights at the working face may be visible from nearby residential areas, CCL will ensure that the light plants leading to and at the working face are no greater than 15 feet in height. The lights will be aimed downward at the access road and working face and fully shielded. After 10:00 p.m., lighting at the working face will only be used if required for operational safety (i.e., lights will not be used if no activities at the working face are occurring).

Because the lighting of the Proposed Project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, the Proposed Project's potential light impacts would be less than significant, and no mitigation would be required.

15.7 Mitigation Measures

No significant impacts have been identified for the Proposed Project. As such, no mitigation measures are required.

15.8 Significance After Mitigation

The Proposed Project would result in less-than-significant impacts without mitigation.

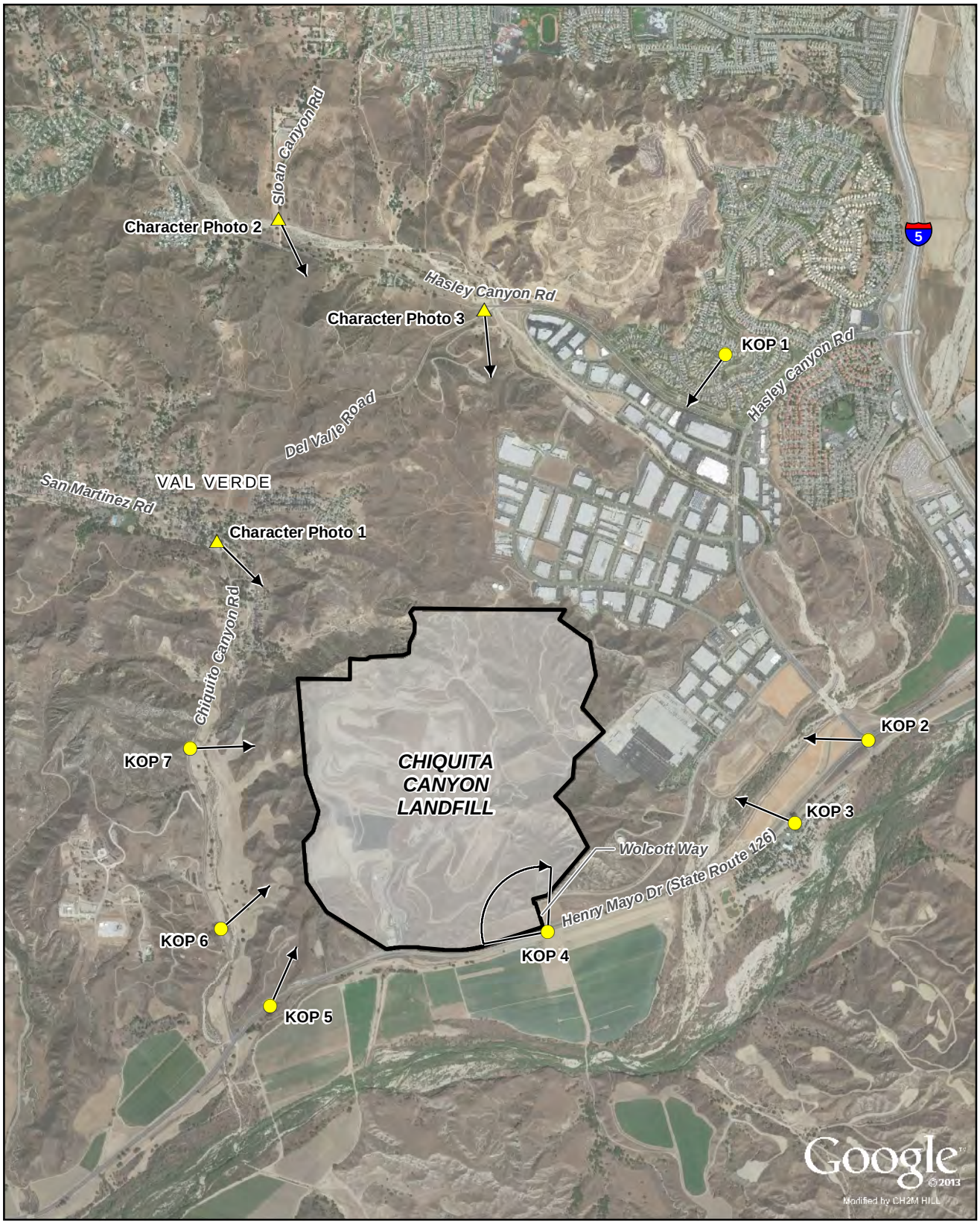
15.9 Cumulative Impacts

The effect of the cumulative projects described in Chapter 3.0, General Setting and Resource Area Analysis, would likely be a substantial change to the visual landscape in the vicinity of CCL. Specifically, recent and proposed developments would result in the continued transition of a slightly rural, less developed area into a more developed urban landscape. Large stretches of agricultural land and open space areas would be replaced with residential, commercial, and industrial developments. In addition, natural landforms such as ridgelines, hillsides, and valleys would be altered by manufactured slopes and grading to accommodate development.

Three primary elements of the Proposed Project would contribute to the larger landscape transformation that is currently in progress around the landfill: the new entrance, new sources of nighttime lighting at the landfill entrance, and landform alteration in the form of the waste footprint extension. As discussed in previous sections of this analysis, the visual impacts of these proposed changes would be less than significant in and of themselves or when considered in the context of surrounding development. However, it is reasonable to consider that the visual impacts of the Proposed Project would incrementally contribute to the larger landscape transformation that is already in progress.

Where information was available, visual simulations of the Proposed Project in conjunction with cumulative projects were created. The visual simulations for KOPs 2 and 3 were revised to reflect the commercial and industrial development currently under construction along the north side of SR-126, west of Commerce Center Drive. Figures 15-11a and 15-11b contrast the view from KOP 2 at the end of the Proposed Project with the Proposed Project including cumulative projects. As shown, the new development would entirely block views of the Proposed Project from the intersection of SR-126 and Commerce Center Drive. Figures 15-12a and 15-12b contrast the view from KOP 3 at the end of the Proposed Project with a view of the Proposed Project including cumulative projects. As shown, the development would block much of the view of the Proposed Project from the entrance/exit of Travel Village. These simulations demonstrate the future changed landscape in the vicinity of CCL. The simulations also show that the introduction of cumulative projects into the landscape may reduce the overall effect of the Proposed Project on the surrounding landscape and/or substantially block views of the Proposed Project from key viewing locations.

While the Proposed Project would incrementally contribute to substantial changes to the landscape in the vicinity of CCL, these changes would not substantially degrade the existing visual character or quality of the site and its surroundings. As such, potential impacts are considered less than significant, and no mitigation for cumulative impacts is required.



LEGEND

- Character Photo
- KOP
- Photo Direction
- Project Boundary

N

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Miles

FIGURE 15-1
Photo Viewpoint Locations
Chiquita Canyon Landfill
Master Plan Revision

a. KOP 1 – Existing view of the Proposed Project site looking southwest from a relatively new single family subdivision located in the elevated area to the north and east of Hasley Canyon Road, along Alton Way.

b. KOP 1 – Simulated view of the Proposed Project site looking southwest from the subdivision that depicts the view as it would appear at the end of the operational phase.

FIGURE 15-2
KOP 1
Residential Area North and East of Hasley Canyon Road
Chiquita Canyon Landfill Master Plan Revision

CH2MHILL

a. KOP 2 – Existing view of the Proposed Project site looking west from the southeastern corner of the intersection of SR-126 and Commerce Center Drive.

b. KOP 2 – Simulated view of the Proposed Project site looking west from the intersection depicting the view as it would appear at the end of the operational phase.

FIGURE 15-3
KOP 2
Intersection of SR-126 and Commerce Center Drive
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

a. KOP 3 – Existing view of the Proposed Project site looking northwest from the entrance of Valenica Travel Village.

b. KOP 3 – Simulated view of the Proposed Project site looking northwest from the entrance of Valencia Travel Village depicting the view as it would appear at the end of the operational phase.

FIGURE 15-4
KOP 3
Valencia Travel Village
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

a. KOP 4 – Existing view of the Proposed Project site looking north northwest from the SR-126 and Wolcott Way intersection.

b. KOP 4 – Simulated view of the Proposed Project site looking north northwest from the SR-126 and Wolcott Way intersection depicting the view as it would appear at the end of the operational phase.

FIGURE 15-5
KOP 4
Wolcott Way at SR-126
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

a. KOP 5 – Existing view of the Proposed Project site looking northeast from SR-126 at a point northeast of the intersection with Chiquito Canyon Road.

b. KOP 5 – Simulated view of the Proposed Project site looking northeast from SR-126 at a point northeast of the intersection with Chiquito Canyon Road depicting the view as it would appear at the end of the operational phase.

FIGURE 15-6
KOP 5
Eastbound SR-126
Chiquita Canyon Landfill
Master Plan Revision

a. KOP 6 – Existing view of the Proposed Project site looking northeast from Chiquito Canyon Road.

b. KOP 6 – Simulated view of the Proposed Project site looking northeast from Chiquito Canyon Road depicting the view as it would appear at the end of the operational phase.

FIGURE 15-7
KOP 6
Chiquito Canyon Road
Chiquita Canyon Landfill
Master Plan Revision

a. KOP 7 – Existing view of the Proposed Project site looking northeast from Chiquito Canyon Road.

b. KOP 7 – Simulated view of the Proposed Project site looking northeast from Chiquito Canyon Road depicting the view as it would appear at the end of the operational phase.

FIGURE 15-8
KOP 7
Chiquito Canyon Road
Chiquita Canyon Landfill
Master Plan Revision

Character Photo 1 - View from the Chiquito Canyon Road and San Martinez Road intersection looking southeast toward the Chiquita Canyon Landfill. Steep slopes and vegetative screening blocks views of the landfill.

Character Photo 2 – View from the Sloan Canyon Road and Hasley Canyon Road intersection looking south southeast toward the Chiquita Canyon Landfill. Steep slopes and vegetative screening blocks views of the landfill.

FIGURE 15-9
Communities North and Northwest of Chiquita Canyon Landfill
Chiquita Canyon Landfill
Master Plan Revision

Character Photo 3 - View from the Hasley Canyon Road and Del Valle Road intersection looking south southwest toward the Chiquita Canyon Landfill. Steep slopes and vegetative screening blocks views of the landfill.

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FIGURE 15-10
Communities North of Chiquita Canyon Landfill
Chiquita Canyon Landfill
Master Plan Revision

a. KOP 2 – Simulated view of the Proposed Project site as it would appear at the end of the operational phase looking west from the southeastern corner of the intersection of SR-126 and Commerce Center Drive.

b. KOP 2 – Simulated view of the Proposed Project site as it would appear at the end of the operational phase that includes cumulative projects development, looking west from the intersection.

FIGURE 15-11
KOP 2
Intersection of SR-126 and Commerce Center Drive
Chiquita Canyon Landfill Master Plan Revision

a. KOP 3 – Simulated view of the Proposed Project site as it would appear at the end of the operational phase looking northwest from the entrance of Valencia Travel Village.

b. KOP 3 – Simulated view of the Proposed Project site as it would appear at the end of the operational phase that includes cumulative projects development, looking northwest from the entrance of Valencia Travel Village.

FIGURE 15-12
KOP 3
Valencia Travel Village
Chiquita Canyon Landfill
Master Plan Revision

CH2MHILL

CHAPTER 16.0

Environmental Justice and Socioeconomics

16.1 Introduction

The California Environmental Quality Act (CEQA) does not require consideration of potential implications to environmental justice or socioeconomics as a specific resource area. A number of state agencies, however, require that consideration be given to potential environmental justice implications of project implementation. Also, topical areas typically addressed under socioeconomics such as population and housing, public services, and growth inducement require assessment under CEQA. Therefore, in the interest of full disclosure, both environmental justice and socioeconomic resources are discussed here.

16.2 Methodology

The study area for this resource is defined as Los Angeles County, including the Val Verde Census Designated Place. This evaluation examined baseline population and housing data for these jurisdictions and analyzed potential impacts resulting from implementation of the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project). Data utilized in this analysis consisted of current and forecasted demographic data obtained from the U.S. Census Bureau and City Data; data from the California Department of Education were also analyzed. The significance of the impacts was assessed in accordance with criteria presented in Appendix G of the CEQA Guidelines.

16.3 Regulatory Setting

16.3.1 Environmental Justice

There are currently no formal requirements or procedures to evaluate potential environmental justice impacts under CEQA. However, there is existing federal policy that addresses environmental justice. Additionally, several state agencies provide guidance regarding their environmental justice requirements and procedures. Existing federal policy and state environmental justice processes are discussed below.

16.3.1.1 Federal Regulations and Standards

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), requires that each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. EO 12898 further specifies that federal agencies shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health effect, or economic effect on the surrounding populations.

In response to EO 12898, the United States Environmental Protection Agency (EPA) issued a series of draft guidelines described in *Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits (Draft Revised Investigation Guidance)* (EPA, YEAR) and *Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Programs (Draft Recipient Guidance)* (EPA, 2000). The purpose of these guidelines is to clarify for agencies and citizens the compliance requirements of Title VI of the Civil Rights Act. However, these guidelines have not yet been formally established.

16.3.1.2 State Regulations and Standards

Some state agencies have developed their own environmental justice guidelines, which are summarized below.

The California Air Resources Board (CARB) has taken steps to address environmental justice. CARB was the first state entity to adopt an environmental justice policy. CARB has taken various steps to implement the policy, including modeling best practices for public meetings, publishing a public participation handbook for agencies and the public in both English and Spanish, and developing an air quality handbook on land use. CARB has also convened a multi-stakeholder environmental justice group to serve as a forum to discuss its environmental justice program.

In October 1997, the South Coast Air Quality Management District (SCAQMD) instituted a number of community initiatives to ensure environmental justice for all. SCAQMD initiatives include monthly public meetings, a comprehensive study of toxic hot spots, a more thorough review of environmental impact reports, creation of a task force to seek consensus on solutions to environmental justice concerns, and review of SCAQMD's toxic air containment rules.

In addition, the California Department of Resources Recycling and Recovery (CalRecycle, formerly the California Integrated Waste Management Board (CIWMB)) has discussed enacting various policies related to environmental justice. These proposed policies include:

- Developing a proposal for incorporating environmental justice into its permitting process and submitting the proposal to the California Environmental Protection Agency (CalEPA) for its approval.
- Tracking demographic information for communities in which solid waste facilities are located, and making this information available to the public.

As of this writing, the CalRecycle has not enacted any standards or requirements relative to a policy on environmental justice in connection with its permitting process. However, Assembly Bill (AB) 1497, enacted into law in 2003, requires that for any revision of a solid waste facility's permit, an informational public meeting must be held, and environmental justice considerations must be considered in the permit meeting notice. Specifically, the enforcement agency shall consider environmental justice issues when preparing and distributing the notice to ensure that the notice is concise and understandable for limited-English-speaking populations.

No additional legislative or regulatory guidance has been adopted either by subsequent legislation or by regulation to determine the types and kinds of discussion appropriate for the public meeting process. Regulations to implement AB 1497's permit revision process requirements were adopted on June 27, 2012. The regulations do not contain any policy or other information concerning environmental justice matters.

CalEPA has established a model environmental justice program that involves an Interagency Working Group on Environmental Justice and a multi-stakeholder Advisory Committee made up of 17 members to guide program and policy development and to develop an environmental justice strategy for the CalEPA. The interagency working group, which includes the Office of Planning and Research (OPR), will consider the recommendations as it develops its environmental justice strategy. Other entities within CalEPA have also engaged in environmental justice activities, such as the Department of Toxic Substances Control.

The California Resources Agency has finalized an environmental justice policy that includes a mission statement, background, policy statement, and a framework for its implementation program. In addition, the California Resources Agency convenes interagency meetings of environmental justice staff involved to discuss environmental justice efforts. OPR has provided consultation in its policy development and as it embarks on phase two of CEQA amendments to address environmental justice. Various departments within the California Resources Agency have also taken the initiative to address environmental justice.

The California Energy Commission (CEC) has conducted environmental justice analyses as part of its certification process for more than 50 large thermal power plants over the past 8 years, and also has been an active and long-term participant in the OPR environmental justice Steering Committee. The CEC has provided

presentations on its environmental justice approach at OPR environmental justice coordinating committee meetings and at various other environmental justice related forums sponsored by government and private entities. The CEC has made many improvements to its environmental justice analysis approach over the years, and has also begun providing in-house environmental justice training to its staff.

The California State Lands Commission (SLC) adopted an environmental justice policy in October 2002 after distributing an interim policy to 51 environmental justice and community organizations throughout California for comment. In its policy, the SLC "pledges to continue and enhance its processes, decisions, and programs with environmental justice as an essential consideration." The policy also cites the definition of environmental justice in state law and points out that this definition "is consistent with the Public Trust Doctrine principle that the management of trust lands is for the benefit of all of the people." The SLC was aided in its drafting efforts by OPR, which provided background information and examples of environmental justice policies and statements from both the public and private sector.

The California Department of Transportation (Caltrans) released a Director's Policy and a Deputy Directive in November of 2001, which lists specific responsibilities for various levels of staff to address environmental justice. Caltrans also administers an Environmental Justice: Context-Sensitive Planning Grant Program. The purpose of this environmental justice grant is to promote more public involvement by diverse and underserved communities in the planning of transportation projects to prevent or mitigate disproportionate, negative impacts of plans and projects while improving the mobility, access, equity, and quality of life of these communities. Outside state agency, staff also assists in reviewing these environmental justice grant applications, including the OPR. OPR has also assisted Caltrans in providing environmental justice training to local communities.

Other initiatives to ensure environmental equity have come in the form of legislation. In 1999, the former California State Senator Hilda Solis authored an environmental justice bill, Senate Bill (SB) 115, which required that CalEPA develop a model environmental justice mission statement for its boards, departments, and offices. The mission statement is as follows:

- To accord the highest respect and value to every individual and community, [CAlEPA] and its Boards, Departments, and Offices shall conduct their public health and environmental protection programs, policies, and activities in a manner that is designed to promote equality and afford fair treatment, full access and full protection to all Californians, including low income and minority populations.

SB 115 also specified that CalEPA, in designing its mission for programs, policies, and standards, do all of the following:

- Conduct its programs, policies, and activities that substantially affect human health or the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.
- Promote enforcement of all health and environmental statutes within its jurisdiction in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations in the state.
- Ensure greater public participation in the CalEPA's development, adoption, and implementation of environmental regulations and policies.
- Improve research and data collection for programs within the agency relating to the health of, and environment of, people of all races, cultures, and income levels, including minority populations and low-income populations of the state.
- Identify differential patterns of consumption of natural resources among people of different classifications for programs within the agency.

A second California bill, SB 89, called for the formation of a working group on environmental justice that would be responsible for developing and implementing environmental justice strategies. The bill also made some minor changes to the provisions of SB 115 by adding the following items to the bulleted list above:

- Coordinate its efforts and share information with EPA.
- Consult with and review any information received from the Working Group on Environmental Justice established to assist the CalEPA in developing an agency-wide environmental justice strategy.

16.4 Regional Setting

CCL is located in the northwestern portion of unincorporated Los Angeles County approximately 3 miles west of the Interstate 5 (I-5) and State Route 126 (SR-126) junction. CCL is approximately 7 miles northwest of the City of Santa Clarita, 3.5 miles southwest of the community of Castaic, and approximately 0.5 miles southwest of Val Verde, which is an unincorporated community in Los Angeles County and the nearest existing community to CCL. The study area for evaluating potential environmental justice impacts consists of the census block group in which the landfill resides, which includes the community of Val Verde. Demographic data from the 2010 U.S. Census Bureau were used, in addition to other sources such as City Data.

16.4.1 Demographic Characteristics

According to the U.S. Census Bureau, the County of Los Angeles had a total population of 9,818,605 persons in 2010. The U.S. Census population estimate for Los Angeles County is 9,889,056 persons as of July 1, 2011. According to the 2010 U.S. Census population, Val Verde had a population of 2,468 persons.

Selected demographic information for the County and Val Verde are provided in Tables 16-1 and 16-2.

TABLE 16-1
2010 Population Data

Category	Los Angeles County	Val Verde (CDP)
Total Persons	9,818,605	2,468
Families	2,194,080	534
Households	3,241,204	671

Source: U.S. Census Bureau 2010 Demographic Profile Data

Note: A family consists of a householder and one or more persons living in the same household who are related by birth, marriage, or adoption. A household includes all persons who occupy a housing unit (e.g., a house apartment, mobile home).

CDP = Census Designated Place (unincorporated community)

TABLE 16-2
2010 Demographic Characteristics

Demographic Characteristic	Los Angeles County		Val Verde CDP	
	Total Persons	Percent	Total Persons	Percent
Total Population	**9,818,605**		**2,468**	
Not Hispanic or Latino:				
White alone	2,728,321	27.8	737	29.9
Black/African American alone	815,086	8.3	98	4.0
American Indian and Alaska Native alone	18,886	0.2	6	0.2
Asian alone	1,325,671	13.5	44	1.8
Native Hawaiian and Other Pacific Islander alone	22,464	0.2	0	0.0
Other Race alone	25,367	0.3	6	0.2
Two or More Races	194,921	2.0	70	2.8

TABLE 16-2
2010 Demographic Characteristics

Demographic Characteristic	Los Angeles County Total Persons	Los Angeles County Percent	Val Verde CDP Total Persons	Val Verde CDP Percent
Hispanic or Latino:				
Hispanic Origin (of any race)	4,687,889	47.7	1,507	61.1
Total Minority Population	**7,090,284**	**72.2**	**1,731**	**70.1**

Source: U.S. Census Bureau 2010 Demographic Profile Data
CDP = Census Designated Place (unincorporated community)

The age distribution for the populations of Los Angeles County and Val Verde is shown in Table 16-3. The proportion of the population aged 19 years and younger is slightly higher in Val Verde than for the County as a whole, while the population aged 65 years and older is noticeably lower in Val Verde versus the County.

TABLE 16-3
2010 Population Age Distribution

Age Category (years)	Los Angeles County Total Persons	Los Angeles County Percent	Val Verde Total Persons	Val Verde Percent
0-19	2,711,958	27.7	785	31.8
20-34	2,228,519	22.7	573	23.2
35-54	2,799,273	28.5	743	30.1
55-64	1,013,156	10.3	243	9.8
65 +	1,065,699	10.9	124	5.0

Source: U.S. Census Bureau 2010 Demographic Profile Data

The estimated median household income per year for Los Angeles County for 2006 to 2010 was $55,476; median family income was $61,622; and per capita income was $27,344. During the same period in Val Verde, the median household income was $57,024; median family income was $56,934; and per capita income was $15,724 (2006-2010 American Community Survey 5-Year Estimates). The poverty level for populations of Los Angeles County and Val Verde are shown in Table 16-4.

TABLE 16-4
2006-2010 Persons Below Poverty Level

Income Below Poverty Level	Los Angeles County Total Persons	Los Angeles County Percent	Val Verde CDP Total Persons	Val Verde CDP Percent
Number of Individuals below poverty level	1,508,618	15.7	237	9.1

Source: U.S. Census Bureau, 2006-2010 American Community Survey
CDP = Census Designated Place (unincorporated community)
Note: Los Angeles County poverty level estimate is based on a total population of 9,604,871;
Val Verde CDP poverty level estimate is based on a total population of 2,603.

16.4.2 Housing

The total housing stock for Los Angeles County in 2010 was 3,445,076 units, of which 3,241,204 were occupied and 203,872 were vacant, resulting in a vacancy rate of approximately 5.9 percent (U.S. Census Bureau, 2010). The median value of owner-occupied housing units in the county for 2006 to 2010 was $508,800. According to the U.S. Census Bureau (2010), new housing units authorized for construction in Los Angeles County in 2010 numbered 9,895. Of these, 2,275 (23.0 percent) were single-family residences and 7,620 were multi-family residences.

Val Verde contained a total of 715 housing units, of which 671 were occupied and 44 were vacant, resulting in a vacancy rate of approximately 6.2 percent.

16.4.3 Schools

There are 93 school districts in Los Angeles County, a total of 2,162 schools. For the 2010-2011 school year, there were approximately 1,589,390 students. On average, there is about one full-time teacher for every 22 students. Average class size is about 24 students. CCL is located in the Castaic Union School District, which has elementary and middle schools. The Castaic Union School District employs 210 certificated, 152 classified, and 18 confidential/management personnel. There is approximately one full-time teacher for every 22 students. Average class size is about 27 students. The total number of students enrolled in kindergarten through eighth grade for the Castaic Union School District was 2,982 for the 2010-2011 school year. Students of high school age attend the West Ranch High School in the William S. Hart Union High School District.

16.5 Potential Impacts

This chapter evaluates the potential impacts that implementation of the Proposed Project could have on environmental justice and socioeconomic conditions in the vicinity of CCL.

16.5.1 Thresholds of Significance

16.5.1.1 Environmental Justice

As noted earlier, currently there are no formal requirements or procedures to evaluate potential environmental justice impacts under CEQA. CEQA is an informational statutory process that addresses impacts of a project that can or will potentially cause a physical change to the environment. However, the following assessment of potential disproportionate environmental effects to low-income and minority populations is consistent with the environmental justice guidelines for the National Environmental Policy Act (NEPA) identified in the federal document: *Environmental Justice: Guidance Under the National Environmental Policy Act* (Council on Environmental Quality, 1997).

The criterion below is used to determine if the Proposed Project would result in an environmental justice impact:

- A project could have an environmental justice impact if high and adverse project impacts disproportionately affect a minority population or a low-income population.

16.5.1.2 Socioeconomics

Significance criteria for socioeconomics are based on CEQA Guidelines, Appendix G, Environmental Checklist Form. An impact would be considered significant if the Proposed Project would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

16.5.2 Proposed Project

Potential impacts of the Proposed Project related to environmental justice and socioeconomics are described below with respect to the above standards of significance.

16.5.2.1 Environmental Justice

As defined in the EO and the CEQA Guidance, minority populations are defined using racial groups (American Indian or Alaskan Native, Asian or Pacific Islander, Black/African American) and ethnicity (persons of Hispanic origin). An environmental justice impact could be considered to exist where: (1) the minority

population of the affected area exceeds 50 percent; and (2) the minority population portion in the affected area is meaningfully greater than that in the general population or other appropriate geographical unit of comparison. For the purpose of this evaluation, because CCL is a countywide facility, the minority percentage of the general population of the County of Los Angeles is used as the basis for comparison in determining if a minority population is considered to exist.

As shown in Table 16-2, the percent of the 2010 Census Bureau population classified as minority in Los Angeles County is 72.2, and in Val Verde it is 70.1. Considering the two criteria above for determining if a minority population exists, it is evident the minority population of Val Verde does not exceed the minority population of Los Angeles County, which serves as the basis of comparison for this analysis. Thus, the Proposed Project, as determined using the above-stated criteria, would not disproportionately affect a minority population, and potential environmental justice impacts, if present, would be considered less than significant.

To assess low-income populations, the 2010 Census Bureau's poverty thresholds were used. The U.S. Census Bureau defined poverty as:

- One person, under 65 years: $11,344
- One person, 65 years and over: $10,458
- Two people, householder under 65 years, no children under 18 years: $14,602
- Two people, householder under 65 years, one child under 18 years: $15,030
- Four people, including two children under 18 years: $22,113

As shown in Table 16-4, the proportion of persons living below the poverty level in Los Angeles County is 15.7 percent and in Val Verde it is 9.1 percent. This is less than 50 percent of the total number of persons in the respective areas. Additionally, the portion of the population of Val Verde living below poverty level is less than that of Los Angeles County, which serves as the basis of comparison for this analysis. Therefore, the Proposed Project would not disproportionately affect a low-income population, and no potential impacts associated with environmental justice are anticipated.

16.5.2.2 Socioeconomics

The Proposed Project would increase by approximately 25 full-time staff, for a total of approximately 50 full-time staff. The increase in staff is expected to be met by local persons and would not induce population growth in the area. Existing housing and school facilities are adequate to meet current demand. The Proposed Project would not directly or indirectly induce population growth because CCL is an existing operating facility. Additionally, the Proposed Project would maintain the intended land uses of the site and would not conflict with applicable land use plans or adopted policies. Because the Proposed Project would not directly or indirectly induce population growth and would not displace existing housing or people, no potential impacts associated with socioeconomic resources are anticipated.

16.6 Mitigation Measures

No significant adverse impacts to environmental justice or socioeconomic resources resulting from the Proposed Project are anticipated; therefore, no mitigation measures are required.

16.7 Significance After Mitigation

The Proposed Project would not result in significant impacts associated with environmental justice or socioeconomics.

16.8 Cumulative Impacts

16.8.1 Potential Cumulative Impacts

The cumulative projects discussed in Chapter 3.0 would add a combination of residential, commercial, open space, public, and industrial uses within the vicinity of the Proposed Project. However, because the area

surrounding CCL does not have disproportionally minority or low-income populations, the cumulative projects are not anticipated to result in socioeconomic or environmental justice impacts to surrounding communities.

The analysis provided above in Section 16.5.2 shows that the Proposed Project would not result in a significant impact related to socioeconomics or environmental justice. Likewise, the Proposed Project, when combined with reasonably foreseeable projects in the project vicinity, is not expected to incrementally contribute to cumulative impacts related to socioeconomics or environmental justice.

16.8.2 Mitigation Measures Required for Cumulative Impacts

No cumulative impacts associated with socioeconomics or environmental justice would result from implementation of the Proposed Project; therefore, no mitigation measures are required.

CHAPTER 17.0

Other CEQA Required Sections

17.1 General Setting

In accordance with *California Environmental Quality Act (CEQA) Guidelines* Section 15126.2, this section identifies (1)the significant effects of the project, (2) the significant effects of the project that cannot be avoided if the project is implemented, (3) the significant irreversible environmental changes that would be caused by the project, and (4) the growth inducing impacts of the project. Identification of the significant effects of the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project) is included in Chapters 4.0 through 16.0 of the Draft Environmental Impact Report (DEIR).

17.2 Unavoidable Impacts of the Project

In accordance with Section 15126.2(b) of the *CEQA Guidelines*, unavoidable impacts are those which cannot be mitigated to a less-than-significant level.

Mitigation measures proposed as part of the Proposed Project, including those required to comply with state and federal regulations and those recommended by this DEIR, would reduce all of the impacts, except one, to a less-than-significant level. The Proposed Project would result in a significant and unavoidable cumulative impact to air quality (PM_{10} and $PM_{2.5}$) from operational activities based on modeled ambient impacts from criteria pollutant emissions. However, impacts would not occur until construction of the proposed Newhall Ranch developments. No significant impact related to air quality would occur if the Newhall Ranch developments are constructed during the operational life of the landfill. Impacts to air quality have been mitigated to the extent feasible through the implementation of Project Design Measures.

17.3 Significant Irreversible Environmental Changes

The identification of irreversible impacts is required in Section 15126.2(c) of the *CEQA Guidelines*. This section states:

> *"Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."*

The Proposed Project would use heavy equipment powered by fossil fuels for landfill operations. This would be an extension of current heavy equipment use at the existing landfill. Operation of the Proposed Project would better utilize the landfill's remaining and potential disposal capacity. In this regard, while the Proposed Project would result in an irretrievable and irreversible loss through the direct consumption of fossil fuels, it would not result in a new source for consumption of fossil fuels. It is also important to recognize that fossil fuel consumption associated with solid waste disposal would occur regardless of whether the Proposed Project is implemented. Similarly, development of a new solid waste landfill to replace the waste stream currently going to CCL would result in greater consumption of fossil fuels, both from initial development of a new facility as well as from the likelihood of waste being hauled a greater distance before disposal.

The Proposed Project would take place within the existing CCL property. Its past and future use as a landfill has the effect of irreversibly limiting the type of uses that would be appropriate on the Proposed Project site. For example, following closure, the Proposed Project site would not likely support residential, commercial, or industrial uses. However, the Project site would support open space and potentially a park.

17.4 Growth Inducing Impacts of the Project

17.4.1 Background

Section 15126(d) of the *CEQA Guidelines* requires that an environmental impact report (EIR) evaluate the growth-inducing impacts of a proposed project. A growth inducing impact is defined by the *CEQA Guidelines* as:

> *"…the ways in which the proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment . . ."*

Based on the guidelines above, induced growth is any growth which exceeds planned growth of an area and results from new development which would not have taken place without the implementation of the proposed project. CEQA defines growth inducement to include projects that would remove obstacles to population growth and can also be defined as an action that would encourage an increase in density of development in surrounding areas or encourage adjacent development. Growth inducing potential of a project would be considered significant if it results in growth or a population concentration that exceeds those assumptions included in pertinent master plans, land use plans, or projections made by regional planning authorities. Secondary effects of growth could result in significant, adverse environmental impacts, which could increase demand on community and/or public services, increased traffic and/or noise, degradation of air and/or water quality, and conservation of agricultural land and open space to developed areas.

Other parameters to consider when determining whether a proposed project could be growth inducing are:

- **Infrastructure development.** If a project is located in an isolated area and brings with it urban infrastructure, the availability of the extended infrastructure may cause "premature" development. Such development can result in establishment of higher-intensity land uses within a larger area of lower-intensity land uses.
- **Large development.** Growth can occur, as an indirect response when a project is developed that is large relative to the surrounding community. For example, residential development could occur in response to a large commercial or industrial project, due to employment opportunities created by the project.
- **Development precedent.** If a project is permitted in an area where development had not occurred previously, it may establish a precedent for additional development. For example, construction of high-density residential units in an area of limited residential development may set a precedent for local urban sprawl.

17.4.2 Evaluation

The Proposed Project would not introduce features such as other public infrastructure that draw other developments into an area. The area surrounding CCL consists of undeveloped open space with relatively new suburban residential areas located to the northeast and residential development to the west. The Proposed Project would not encourage growth in the area; growth would occur consistent with the County of Los Angeles General Plan (1993). Additionally, no significant infrastructure that could serve other development would be developed as part of the Proposed Project.

The Proposed Project would provide for ongoing waste disposal operations and would not significantly increase local employment or create other effects that could indirectly encourage growth. The Proposed Project would need an additional 25 full-time staff. This small addition of personnel represents a negligible influx of jobs and would not induce population growth.

Landfill operations are part of the public service system that develops in response to community growth. The addition of disposal capacity to CCL is a response to the demand for responsible solid waste management in Los Angeles County. Rather than being growth-inducing, it is done in response to growth. In this regard, the continuation of waste disposal at CCL neither restricts nor promotes new growth, it merely accommodates it. Based upon these considerations, the Proposed Project will not result in significant growth-inducing impacts.

17.5 Impacts Not Further Considered in this EIR

Section 15128 of the *CEQA Guidelines* requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in the EIR. This discussion is based on the Initial Study (IS) and Notice of Preparation (NOP), dated November 21, 2011, which were prepared to determine the potentially significant effects of the Proposed Project as part of the EIR scoping. The IS and NOP are included herein as Appendix A. Based on the IS, it was determined that the Proposed Project would have no impact on agricultural resources, energy, mineral resources, and recreation and that no further analysis was needed. Although the Proposed Project was also determined, as part of the IS, to have no impact on land use, population and housing, and public services, these issues were further analyzed in the DEIR.

CHAPTER 18.0

Project Alternatives

18.1 Introduction

Section 15126(d) of the *California Environmental Quality Act (CEQA) Guidelines* requires an environmental impact report (EIR) to describe a range of reasonable alternatives to the Proposed Project, or to the location of the project, which could feasibly attain most of the basic project objectives while also avoiding or substantially lessening any of the significant environmental effects of the project identified in the EIR. A "rule of reason" governs the range of alternatives to be evaluated in the EIR, and specifies that an EIR should only discuss those alternatives necessary to allow a reasoned choice by decision makers. Of those alternatives considered, an EIR need examine in detail only those the lead agency determines could feasibly attain most of the basic objectives of the project.

As defined by Section 21061.1 of the *CEQA Guidelines*, "feasible" means an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into consideration economic, environmental, social, and technological factors. In determining the feasibility of an alternative, the EIR evaluation must consider several factors including site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the project applicant can reasonably acquire, control, or otherwise have reasonable access to an alternative facility or proposed alternative site. In the case of a private applicant (i.e., not a public agency with eminent domain powers), the applicant does not have the power of eminent domain and cannot acquire the property of others for its intended use. Thus, absent other factors, an EIR is not required to evaluate and study potential offsite alternatives not owned or controlled by an applicant. In addition, if an alternative would cause one or more significant effects, over and beyond those associated with the proposed project after mitigation is applied, those significant effects must be discussed, but in less detail than the project's effects.

The purpose and objectives of the Proposed Project are restated in Section 18.2. Alternatives considered but not evaluated in detail are discussed in Section 18.3. Section 18.4 presents alternatives fully analyzed in this Draft EIR (DEIR) and Section 18.5 provides a comparison of the alternatives. Finally, Section 18.6 makes a determination about the environmentally superior alternative.

18.2 Project Purpose and Objectives

The basic project objectives of the Chiquita Canyon Landfill (CCL) Master Plan Revision (Proposed Project) were considered in selecting alternatives for evaluation and comparison in this chapter to determine whether such alternatives can feasibly attain most of such objectives. For reference purposes, the purposes and objectives of the Proposed Project are summarized below.

The purpose of the Proposed Project is to provide additional disposal capacity through continued operation of CCL to help meet the critical solid waste management needs of Los Angeles County. Development of additional economically viable disposal capacity in a reasonable timeframe is of vital importance to meet the current and anticipated needs for the Santa Clarita Valley and the greater Los Angeles area, as existing landfills reach capacity and close. The Proposed Project will capitalize on the unique opportunity to utilize the existing CCL facility to develop additional disposal capacity.

The primary objectives of the Proposed Project are:

- To help meet the interim disposal needs of the Santa Clarita Valley and greater Los Angeles area, and to postpone or prevent a shortage of cost-effective local disposal capacity projected to occur in the future (e.g., Los Angeles County Department of Public Works [LACDPW], 2013)

- To provide environmentally sound, safe, and cost-effective disposal capacity through continued operation and development of the existing CCL facility; prevent premature closure of the landfill with underutilized remaining permitted airspace capacity; and avoid potential rail transportation impacts
- To continue to provide landfill waste diversion programs that are relied upon by many local cities and communities in achieving state-mandated goals

The LACDPW estimated the solid waste disposal quantity for Los Angeles County was 8,612,083 tons in 2012. Of this amount, 6,239,143 tons were disposed of at Class III landfills in the county and 528,725 tons were disposed of at transformation facilities in the county. Countywide, the diversion rate for this quantity of solid waste was estimated at 60 percent. The estimated waste exported to out-of-county landfills was 1,844,175 tons. At the end of 2012, the total remaining permitted Class III landfill capacity in the county was estimated at 129.2 million tons. By the end of the year 2026, the Class III landfill capacity is estimated at 134 million tons, resulting in a potential deficiency of approximately 5 million tons (LACDPW, 2013).

In 2013, LACDPW conducted an analysis evaluating nine potential scenarios to help the County determine how to maintain adequate solid waste disposal capacity from 2013 to 2026. The analysis included the following scenarios: (1) status quo scenario; (2) increase in diversion rate; (3) utilization of alternative technology capacity; (4) in-county Class III landfill expansions with out-of-county disposal capacity; (5) increase in available out-of County disposal capacity; (6) maximizing diversion rate; (7) increase in alternative technology capacity; (8) full utilization of out-of-county disposal capacity; and (9) full utilization of out-of-county disposal capacity. Out of the nine scenarios conducted, the first three (1-3) resulted in a disposal capacity shortfall during the planning period. The remaining six scenarios (4-9) were determined to avert a disposal capacity shortfall during the planning period. Scenarios 4 through 9 all include expanding existing landfills in the county. LACDPW concluded that “without expanding existing landfills in the County, available disposal capacity would be inadequate to meet the Daily Disposal Demand of all 88 cities and the unincorporated County areas” and would result in a disposal capacity shortfall before the end of the 15-year study period (LACDPW, 2013).

18.3 Alternatives Considered But Not Evaluated in Detail

To determine the alternatives suitable for a detailed discussion in this DEIR, the preparers evaluated a wide range of alternatives, including offsite facility alternatives and non-disposal alternatives. This broad range of alternatives was initially reviewed in light of the Proposed Project’s objectives, to evaluate whether and to what extent the Proposed Project’s objectives and needs could be met by potential alternatives, which might be available either technologically or at other site locations. Based on this initial screening-level evaluation, it was determined that rail haul transport and an alternative landfill design could not feasibly attain the objectives of the Proposed Project. These potential alternatives are discussed below.

18.3.1 Rail Haul Transport to Out-of-County Landfills

LACDPW and the Los Angeles County Sanitation District (LACSD) have continued to pursue the development of out-of-county disposal through waste-by-rail systems as a partial source of long-term disposal capacity for the greater metropolitan Los Angeles regional system.

Two proposed disposal facilities include the Eagle Mountain Landfill in Riverside County and the Mesquite Regional Landfill in Imperial County. LACSD acquired the Mesquite Regional Landfill in the fall of 2013, and intended to transfer solid waste by rail to this facility upon the closure of Puente Hills Landfill (PHL), utilizing an intermodal facility at the PHL. However, LACSD determined that although it will still cease operation of PHL for landfill disposal operations effective October 2013, the intermodal transfer capability being developed at PHL will not be used to import solid waste by rail or truck to Mesquite Regional Landfill. Instead, LACSD intends to process and transfer residual wastes after processing to one or more disposal facilities, and to that end, published a request for proposals (RFP) in the fall of 2012 seeking proposals for disposal of residual wastes after processing at the PHL Material Recovery Facility (MRF). Following issuance of the LACSD RFP, LACSD entered into a disposal agreement with the Orange County Solid Waste Disposal System.

The Eagle Mountain Landfill has been involved in protracted litigation since 1999 relative to a Bureau of Land Management (BLM) land exchange and transfer associated with that project. In 2000, LACSD acquired the right to buy Mine Reclamation Corporation (MRC), the company which owns and sought permits for the Eagle Mountain project. Recent court decisions adverse to the Eagle Mountain project required the Eagle Mountain project proponents to undertake additional environmental review and a new or modified land transfer/exchange with BLM. In 2011, MRC notified LACSD that they were no longer willing to extend escrow on the purchase and sale transaction. The LACSD Board directed its staff to close escrow and hold MRC to its obligations under the LACSD purchase agreement. MRC immediately filed for bankruptcy. LACSD and MRC were in negotiations since that time regarding the property and the landfill project. On May 22, 2013, the LACSD Board determined that LACSD would cease all negotiations with MRC and directed LACSD staff to undertake an ongoing evaluation of long-term waste management strategies.

Also, in 2012, Kaiser Ventures LLC, the parent company of MRC, determined that it will no longer financially support making further revisions to the National Environmental Policy Act documents and the BLM Record of Decision to address the BLM land exchange infirmities identified in judicial decisions. As a result of these developments, the Eagle Mountain project can no longer be considered active, viable, or feasible.

Eagle Mountain Landfill and Mesquite Regional Landfill are remote desert landfill sites, located well over 200 miles from CCL. Currently there is no transfer station (TS) in northern Los Angeles County and no rail loading facility to accommodate the consolidation and transportation of waste. Furthermore, population projections have indicated that Los Angeles County and the area surrounding Chiquita Canyon will continue to grow and generate more refuse in the future. The waste generated in the Chiquita Canyon waste shed would be transported over a much farther distance for disposal, thus potentially resulting in increased air emissions over those anticipated for the Proposed Project. Waste transport by train also has impacts on noise levels, vibration, traffic, and air quality, unlike those associated with truck transport.

At present and for the foreseeable future, LACSD has determined that waste-by-rail to Mesquite Regional Landfill is not feasible. Instead, LACSD will process solid waste at the PHL facility and transfer residual wastes to one or more landfill facilities, but not to remote desert landfill locations.

This alternative would not meet most of the basic project objectives, because consideration of waste-by-rail to remote locations would not secure landfill capacity in proximity to population centers served by CCL prior to projected capacity shortfalls; would not expand CCL within its existing leasehold boundaries; and would not maximize the utilization of available airspace within the CCL site property holdings and realize the value of the property to its fullest potential. The applicant does not own or control a site served by a rail haul or intermodal capability. For all of the above reasons, remote/out-of-county rail haul landfills cannot reasonably be considered a feasible alternative to the Project and, therefore, rail haul transport to out-of-county landfills has been eliminated from further evaluation in this DEIR.

18.3.2 Alternative Landfill Project Design

Consideration was given to an alternative that would limit the size of an expansion, resulting in a smaller amount of additional onsite capacity. Using the criteria established in the *CEQA Guidelines*, an onsite alternative would be considered feasible if it were capable of successfully being implemented in a reasonable timeframe; however, the alternative landfill project design should also be able to feasibly attain most of the project objectives. In the context of CCL, any alternative restricting the landfill operator from obtaining a substantial amount of additional disposal capacity (i.e., an areal expansion) would not meet most of the project objectives and, thus, would not be considered feasible. A reduced onsite alternative landfill was therefore not studied in detail, because it would not meet the objectives of the project to develop a substantial source of additional landfill disposal capacity given short- and long-term demand.

The permitting history for the landfill demonstrates that a reduced onsite alternative landfill concept is already reflected in the current conditional use permit (CUP) constraints for CCL. The current landfill, as limited by the CUP conditions, is a reduced onsite alternative landfill that resulted from the permitting and approval process, which occurred with the previous environmental review and project approval in 1996 to 1997. The ultimate

landfill approval reduced and limited the size of the then-proposed landfill, limited the then-proposed daily tonnage, and placed an overall tonnage cap of 23 million tons, limiting the total amount of materials the landfill can dispose of irrespective of whether the landfill has remaining capacity or has reached its permitted height. These conditions would result in the early closure of the landfill before its capacity can be realized, without additional expansion.

Thus, the alternative concept of reducing and/or limiting site expansion has already been demonstrated to be an alternative that could not feasibly attain the objectives of the Proposed Project. The capacity and service life of a solid waste landfill are based on a number of interconnected variables including daily incoming tonnage, horizontal size, and vertical height of the facility. Disposal volume or capacity of a landfill can be increased by either vertical and/or horizontal expansion. The service life of a landfill can be increased by one or a combination of the following scenarios: (1) reducing its daily intake, (2) increasing its areal extent, or (3) increasing its vertical extent. The prior permitting process and final approval reduced the requested daily receipts rate from what was proposed, and substantially decreased the size of the lateral expansion applied for in the previously proposed expansion project, while allowing an increase in the vertical extension but placing a tonnage cap on the operations that essentially took away any perceived benefit of the vertical extension authorized. Thus, the Proposed Project has been necessitated by the limitations that were imposed on the prior review of the landfill's proposed expansion in 1996 to 1997. Given that the Proposed Project is a direct result of the limitations placed on the previous facility expansion and permit conditions, it is expected that a reduced alternative design would potentially place the facility in a similar circumstance within the next several years. The discussion of in-county landfill disposal capacity in Section 18.4.1.1 illustrates this point.

There are no realistic onsite reduced project alternatives that could feasibly attain most or all of the project objectives, because they would not provide short-term, contingency, or long-term disposal tonnage options to the County; do not offer resource recovery and employment opportunities; would not avoid the significant effects of the expansion; and would not enhance local or regional infrastructure.

18.4 Evaluation of Project Alternatives

This section addresses alternatives to the Proposed Project with a view to avoiding or substantially lessening significant effects of the Proposed Project. In accordance with Section 15126(d) of the CEQA Guidelines, three alternatives are presented in this evaluation to foster meaningful public participation and informed decision making on the subject:

- Alternative A: No Project Alternative
- Alternative B: Waste Reduction and Alternative Technologies
- Alternative C: Alternative New Site in Northern Los Angeles County

18.4.1 Alternative A: No Project Alternative

CEQA requires that an EIR consider the No Project Alternative. For this DEIR, the No Project Alternative is no approval of an expansion of the existing CCL, resulting in the cessation of waste receipts and consequent closure of the existing landfill operations. The current CUP closure date is 2019, however the facility is expected to reach its permit-based disposal limitation of 23 million tons established in the current CUP between 2015 and 2019. Under the No Project Alternative, operation of the landfill with continue until the disposal limitation of 23 million tons established in the current CUP is reached, after which time the landfill would close. With the No Project Alternative, no horizontal or vertical extension of the landfill footprint would occur. Communities that currently rely on the CCL for waste diversion would not have access to that activity and the composting operation and HHWF at CCL would not be developed. The set-aside of land for potential future conversion technology would not be established and site operational elements, such as free cleanup days for the Val Verde community, would no longer be held with the closure of the facility. Operation of the LFGTE Plant would continue many years beyond site closure.

The operational and maintenance requirements of Title 27 California Code of Regulations (CCR), Chapter 5, would need to be met. Under the closure plan requirements, the closure activities would include the placement of final cover, vegetation of the completed areas, construction of permanent drainage features, removal of landfill structures (e.g., scale house, office), and provisions for site security. Closure activities would begin in accordance with the schedule in the approved Final Closure and Postclosure Maintenance Plan. The facility owner and operator would continue to operate the existing groundwater monitoring network and landfill gas (LFG) collection system during the closure and post-closure maintenance periods.

18.4.1.1 Feasibility

The No Project Alternative would require all waste destined for CCL to be redirected to other landfills in the region or otherwise disposed, diverted, or recycled, subject to applicable permit limits, local laws and regulations, and market conditions. An overview of the landfill disposal system for Los Angeles County is described in the *County of Los Angeles Countywide Integrated Waste Management Plan 2012 Annual Report* (LACDPW, 2013). Waste disposal tonnage in Los Angeles County in 2012 is presented in Table 18-1.

TABLE 18-1
Annual Disposal Tonnage for 2012

Facility Type/Exports	Amount Disposed	Units
In-County Class III Landfills	6,304,060	tons
Transformation Facilities	569,539	tons
Exports to Out-of-County Landfills	1,844,175	tons
Subtotal MSW Disposed	8,717,773	tons
Permitted Inert Waste Landfills	89,142	tons
Grand Total Disposed	8,806,915	tons
Average Daily Disposal Rate for 2012 (Based on 6 Operating Days)		
In-County Class III Landfills	20,205	tpd
Transformation Facilities	1,825	tpd
Exports to Out-of-County Landfills	5,911	tpd
Subtotal MSW Disposed	27,942	tpd
Permitted Inert Waste Landfills	286	tpd
Grand Total Disposed	28,227	tpd

Note:
MSW = municipal solid waste

As of December 31, 2012, the total remaining permitted Class III landfill capacity for in-county landfill disposal facilities is estimated at 129.2 million tons, as determined by LACDPW in the *County of Los Angeles Countywide Integrated Waste Management Plan 2012 Annual Report* ("2012 Annual Report") prepared and distributed in August 2013 and considering permit restrictions. Refer to Appendix E-2 of the 2012 Annual Report (provided as Appendix K of this DEIR) for the following information.

- Table 1 provides detailed information on remaining landfill disposal capacity by facility.
- Table 2 summarizes the remaining disposal capacity of engineered inert material landfills.
- Table 3 summarizes the remaining disposal capacity for out-of-county landfills.

LACDPW's long-term solid waste planning discussed in detail in the 2012 Annual Report includes both implementation and expansion of recycling programs, development of in-county capacity increases through expansions of existing facilities, promotion and development of conversion technologies, and use of out-of-county remote landfills. The 2012 Annual Report evaluates nine scenarios, which attempt to measure the effect of increasing diversion rates and utilization of alternative technologies and additional waste exportation

under a number of conditions (Refer to Appendix E-4 of the 2012 Annual Report in Appendix K of this DEIR for detailed data). The analysis is helpful because it looks at many different combinations to determine whether a capacity shortfall exists. The analysis concludes that under any of the scenarios, it is essential that in-county landfill expansions be approved and used to avoid a shortfall in disposal capacity. The No Project Alternative, which by definition postulates that the Proposed Project is not approved and built, would therefore result in the County not meeting its capacity needs as analyzed by LACDPW. A discussion of the scenarios analyzed in the 2012 Annual Report is provided below.

2012 Annual Report Disposal Capacity Analysis Scenarios

Scenario I—the status quo—assumes no expansions of existing landfills, no new landfills, and no additional capacity from alternative technologies. Scenario I aptly depicts a No Project Alternative scenario with respect to the Proposed Project, because it reflects the status quo without the Proposed Project. In addition, the following assumptions are made with respect to imports and exports:

- Imports – Based on the average rate of 452 tpd for 2012, waste import quantities are projected to be 500 tpd for 2013 and 700 tpd every year thereafter.
- Exports – The amount of waste exported out-of-county in 2012 was approximately 5,911 tpd and it is assumed to remain at 6,200 tpd through the remainder of the planning period.

Based on these assumptions, with Scenario I, a disposal capacity shortfall is expected to occur during the planning period. Since the shortfall would occur prior to 2026, Scenario I shows that existing capacity would not meet the daily disposal demand of the county.

Scenario II assumes an increase in the diversion rate up to 65 percent, using existing in-county Class III landfills and transformation facilities together with current available out-of-county disposal capacity (6,200 tpd). In addition, the following assumptions are made:

- Imports – Based on the average rate of 452 tpd for 2012, waste import quantities are projected to be 500 tpd for 2013 and 700 tpd every year thereafter.
- Exports – The amount of waste exported out-of-county in 2011 was approximately 5,911 tpd, and it is assumed to be at 6,200 tpd through the remainder of the planning period.

Based on these assumptions, a disposal capacity shortfall is expected to occur during the planning period. Since the shortfall would occur prior to the year 2026, Scenario II shows that development of all in-county proposed expansions alone would not be able to meet the County's daily disposal demand.

Scenario III assumes utilization of potential alternative technology capacity, up to 2,300 tpd, together with existing in-county landfills and transformation facilities, and utilizing current available out-of-county landfill disposal capacity. Scenario III also includes an increase in the diversion rate up to 65 percent. Scenario III assumes that by 2017, alternative technology facilities for residential waste would become operational in the county. The permitted capacity of these facilities is estimated to start at 1,300 tpd in 2017 and increase to 2,300 tpd in 2021. In addition, the following assumptions are made:

- Imports – Based on the average rate of 452 tpd for 2012, waste import quantities are projected to be 500 tpd for 2013 and 700 tpd every year thereafter.
- Exports – The amount of solid waste exported out-of-county of approximately 5,911 tpd is assumed to remain at 6,200 tpd through the remainder of the planning period.

Based on these assumptions, a disposal capacity shortfall is expected to occur during the planning period. Therefore, the increased alternative technology capacity of up to 2,300 tpd would not be able to meet the County's daily disposal demand.

Scenario IV evaluates in-county Class III landfill expansions (with no increase in out-of-county disposal capacity), existing in-county Class III landfills and transformation facilities, current available out-of-county disposal capacity, and an increased diversion rate up to 65 percent. In addition, this scenario includes

utilization of potential alternative technology capacity up to 2,300 tpd. Scenario IV has the following import/export assumptions:

- Imports – Based on the average rate of 452 tpd for 2012, waste import quantities are projected to be 500 tpd for 2013 and 700 tpd every year thereafter.
- Exports – The approximately 5,911 tpd of solid waste export is assumed to remain at 6,200 tpd through the remainder of the planning period.

Based on these assumptions, a disposal capacity shortfall could be averted during the 15-year planning period. Therefore, the 2012 Annual Report concludes that development of proposed in-county landfill expansions, using potential alternative technologies, and exporting up to 6,200 tpd would be able to meet the County's daily landfill disposal demand.

Scenario V, an increase in available out-of-county landfill disposal capacity, uses the same assumptions as Scenario IV, with the exception of assuming the increased out-of-county disposal capacity. The amount of waste exported out-of-county in 2012 was approximately 5,911 tpd and is assumed to gradually increase up to 12,000 tpd during the planning period. Based on these assumptions, a disposal capacity shortfall would be averted during the 15-year planning period. Therefore, development of proposed landfill expansions and exporting up to 12,000 tpd would allow the County to meet its daily disposal demand.

Scenarios VI through IX evaluate additional scenarios, which include approval of in-county landfill expansions, increased diversion rates up to 75 percent and increased importation of wastes. The analyses conclude that development of proposed landfill expansions with increased exportation of solid waste and increased use of alternative technologies would allow the County to meet its daily disposal demand.

To determine the short- and long-term effects of the No Project Alternative on the waste management system in Los Angeles County, this DEIR has evaluated all of the scenarios examined in detail by LACDPW in its 2012 Annual Report. There is no short- or long-term capacity sufficient to handle CCL's solid waste at either Antelope or Lancaster, even with an expansion to 3,000 tpd for Antelope Valley. In addition, the approved developments in and around the Santa Clarita area will add 16,000 new homes in the next two decades, thus substantially contributing to the increased capacity demand noted in the LACDPW projections.[1] Thus, a Countywide and northern Los Angeles County regional capacity shortfall will exist within 2 to 3 years when CCL is anticipated to close under the No Project Alternative.

18.4.1.2 Environmental Analysis

In accordance with CEQA, the following analysis evaluates the environmental impacts of the No Project alternative, as well as the secondary impacts of the possible redistribution of CCL's waste to other permitted facilities under their existing permit conditions.

The final elevation of the landfill units would not reach the permitted maximum of 1,430 feet above mean sea level, except in one area. This is a result of the effect of the 23-million-ton cap, which artificially eliminates a substantial amount of available capacity within the existing approved landfill footprint. In general, the No Project Alternative is a continuation of the existing operations until capacity is reached. A summary of the anticipated impacts of the No Project Alternative is provided in Table 18-2.

[1] At the outset of the discussion regarding system capacity to absorb a redistribution of solid waste currently disposed of at CCL, it must be noted that since 2008, waste disposal data have been lower than historically available information primarily because of the Global Recession, the worst economic downturn since the Great Depression of the 1930s. Reduction in economic activity such as demolition and construction and associated disposal and recycling volumes has temporarily lowered the overall estimates of disposal volumes and thus tends to overstate the remaining landfill capacity if viewed in isolation apart from the inevitable return to a more normal economic level of activity, which will include homebuilding, generation of construction and demotion debris, and ultimately an increase in disposal volumes as people move into new homes.

TABLE 18-2
Alternative A: No Project
Potential Environmental Impacts

Environmental Resource Area	Alternative A: No Project
Land Use	Under Alternative A, there would be no expansion of the existing landfill and therefore no impacts to land use would occur.
Geology and Hydrogeology	Under Alternative A, there would be no expansion of the existing landfill and therefore no impacts to geology and hydrology would occur.
Surface Water Drainage	Under Alternative A, no construction would occur, and drainage patterns on the Project site would not be altered from existing conditions. Absent any expanded landfill operations under this alternative and compliance with the existing WDRs and Industrial Stormwater Pollution Prevention Plan (SWPPP), there would be no impacts related to surface water hydrology or water quality.
Water Quality	See Surface Water Drainage above.
Biological Resources	The impacts related to biological resources would be less for Alternative A compared to the Proposed Project. The landfill expansion area affected by the Proposed Project, and the potential species found in those areas, would experience little to no disturbance with Alternative A.
Cultural and Paleontological Resources	The impacts related to cultural and paleontological resources would be less for Alternative A compared to the Proposed Project. The landfill expansion area affected by the Proposed Project would experience little to no disturbance with Alternative A.
Traffic and Transportation	Alternative A would not involve an increase in the currently permitted disposal truck trips. However, when CCL ceases to accept Class III waste streams, the existing car and truck traffic associated with the currently permitted operations would be redirected to other landfills. This would result in additional traffic traveling on state highways and county roads, which may be experiencing congested conditions unlike the roadways serving the project site. The impacts to transportation and traffic from Alternative A would likely be greater than those of the Proposed Project, and are potentially significant.
Air Quality	Alternative A would involve no expansion of the existing landfill or construction associated with the relocation of existing facilities. There would be no increase in daily tonnage or vehicles beyond that already permitted and the life expectancy of the landfill would not be increased. When CCL reaches its permitted capacity, air quality emissions associated with daily operations (e.g., truck trips, active face activity, and daily cover application using heavy equipment) would be substantially lessened. Air emissions and potential impacts are not eliminated; however, because the LFG collection and disposal system would continue to operate for a minimum of 30 years; and the closure plan would require construction of the final cover and periodic maintenance trips to the facility. Once the capacity of the permitted waste cells are reached, the annual air quality impacts from landfill operations would cease, but such effects would be transferred to other landfill locations within the same air basin (South Coast Air Basin). Furthermore, the waste would need to be hauled longer distances to other landfills. Air quality impacts resulting from Alternative A could be significant and unavoidable and greater than those of the Proposed Project due to increased mobile emissions.
Greenhouse Gas Emissions and Climate Change	As described above, under Alternative A, no waste would be placed beyond the current permitted capacity and all associated operations emissions would stop once capacity is reached. Greenhouse gas (GHG) emissions generated from the waste are assumed to be equivalent for the Proposed Project and Alternative A, because the generation of greenhouse gases would take place at any facility where the waste was disposed. However, transportation-related air quality impacts, including increased GHG-related mobile emissions would increase with transport of waste to more distant locations. Additional indirect impacts would occur from waste that normally would have gone to CCL, using up available capacity at other Class III landfills, which are generally limited within the state, thereby resulting in the early closure of other Class III sites. This closure would create cascading direct, and indirect impacts in that it would result in the waste from other facilities being redirected to Class III landfills or otherwise requiring the construction of a new Class III facility if the Project is not constructed. Impacts related to GHG emissions are likely to be similar to or slightly greater than the Proposed Project.

TABLE 18-2
Alternative A: No Project
Potential Environmental Impacts

Environmental Resource Area	Alternative A: No Project
Noise	Under Alternative A, the existing landfill operation would remain active until the site reaches its current permitted capacity. Therefore, impacts related to noise would be similar to the Proposed Project, but the noise impacts associated with Alternative A would end sooner than for the Proposed Project.
Public Services and Utilities	Under Alternative A, the existing landfill would continue to operate under the existing CUP. The demand for fire or police protection services would be similar to the Proposed Project but would end sooner than for the Proposed Project.
Visual Resources	Alternative A would involve no expansion of the existing landfill or construction associated with the relocation of existing facilities, thereby retaining the current visual character of the site. The existing landfill is an established and accepted part of the landscape. Alternative A would continue operations until the disposal area reaches capacity. Final closure of the existing facility would not occur until after capacity is reached. Alternative A would avoid the visual changes associated with the new project facilities and extended waste footprint. There would be no impacts to visual resources from Alternative A.
Environmental Justice and Socioeconomics	Under Alternative A, the existing landfill would continue to operate under the existing CUP and there would be no impacts to environmental justice and socioeconomics.
Meet Project Objectives?	No
Reduce Significant and Unavoidable Impacts?	No

18.4.1.3 No Project Alternative Conclusion

The No Project Alternative is not considered to be a feasible alternative to the Proposed Project because it neither avoids nor substantially lessens the effects associated with air quality, nor accomplishes the primary purposes and objectives of the Proposed Project. This is based on the following:

- Most of the basic project objectives would not be achieved, such as expanding CCL with additional capacity and resource recovery operations; providing in-county daily disposal capacity and general long-term capacity; providing convenient access and competitive pricing to landfill users; supporting future infrastructure needs of the area; and maximizing the value of the operations.
- Closing CCL would not afford the County of Los Angeles the opportunity to maximize the use of CCL's location as a potential expansion site to develop needed landfill disposal capacity, as well as to realize other waste disposal reductions associated with resource recovery and beneficial reuse operations.
- If CCL ceases to accept waste under the No Project Alternative, the County's short- and long-term disposal capacity shortfall will be exacerbated.
- To achieve available capacity, permit conditions for the remaining landfills in the system would have to be changed to allow increased daily tonnage, and/or sites would have to be expanded to satisfy the short- and long-term daily disposal need with the closure of CCL. Under those circumstances, unanticipated significant environmental impacts of increased waste disposal could be transferred to other locations in the county or elsewhere. To change permits or expand other sites, each permitting agency would have to undertake a permit revision, as discretionary projects under CEQA. Each change in a permit would entail a public review process under CEQA.

To the extent that the system is able to absorb the wastes currently disposed of at CCL, many of the daily operational impacts would be simply transferred from one facility to another.

18.4.2 Alternative B: Waste Reduction and Alternative Technologies

This alternative describes and evaluates waste reduction techniques and alternative technologies that could potentially be applied to the solid waste management system in Los Angeles County, including source reduction, mechanical volume reduction, resource recovery, and conversion technologies. Given the large diversity of existing conversion technologies, it is not practical to provide an exhaustive description and analysis of these systems, or their many variants, in this DEIR. This section summarizes the primary technological, economic, and environmental advantages and disadvantages of waste reduction and conversions technologies as a whole.

Los Angeles County Diversion Rates

Assembly Bill (AB) 939 initially required that a waste diversion level of 25 percent be achieved by cities and unincorporated areas within Los Angeles County by 1995, with a waste diversion level of 50 percent to be achieved by the year 2000. Senate Bill (SB) 341 established a new goal of an overall statewide landfill diversion rate of 75 percent by the year 2020. Each county prepares and administers a Countywide Integrated Waste Management Plan (CIWMP). This plan comprises the County's and the cities' solid waste reduction planning documents plus an Integrated Waste Management Summary Plan (Summary Plan) and a Countywide Siting Element.

The County of Los Angeles includes 88 cities and approximately 150 unincorporated communities with a combined population in excess of 10 million. The County of Los Angeles has the largest and most complex solid waste management system in the country, with over 140 permitted waste haulers, 29 large volume TS/MRFs, 11 MSW landfills, 11 inert waste landfills, 2 waste-to-energy facilities, 43 construction and demolition debris recycling facilities, and 350 recyclers. Each year, Los Angeles County residents and businesses generate approximately 21.5 million tons of materials, with approximately 60 percent being diverted through source reduction and recycling away from disposal. This presents a challenge in not only protecting the public health and safety and the environment through effective solid waste management on a daily basis, but also continuing to expand waste reduction, resource recovery, and recycling programs and policies.

In order to assess jurisdiction's compliance with AB 939, the Disposal Reporting System was established to measure the amount of disposal from each jurisdiction and determine if it had met the goals. With the passage and implementation of SB 1016, the California Department of Resources Recycling and Recovery (CalRecycle) no longer calculates diversion rates based on actual disposal and estimated annual generation. As a result, countywide diversion rates are no longer calculated. The last diversion rates approved by CalRecycle were for 2006. Considering each jurisdiction's approved diversion rate, a countywide diversion rate for 2006 was estimated to be 58 percent.

Under SB 1016, a target per capita disposal rate, which is equivalent to a 50 percent diversion rate, is calculated using an approved jurisdiction-specific average of per capita generation rates of years 2003 to 2006. To establish compliance with AB 939, each jurisdiction's per capita disposal rate is calculated for each reporting year and compared with their individual target rates.

Using projections of population, employment, and real taxable sales from the University of California, Los Angeles, LACDPW estimates that in order to meet the per capita disposal requirements, jurisdictions in Los Angeles County would need to continue their diversion programs, employ other disposal reduction strategies, and as a whole maintain and/or improve the existing diversion rate.

18.4.2.1 Source Reduction

Source reduction generally involves the alteration of manufacturing and packaging techniques and a change in consumer purchasing and use habits to minimize the amount of waste that is generated. In the United States, a significant reduction in unnecessary disposable items could result in a substantial reduction of the overall waste stream. Specific source reduction techniques that city and county jurisdictions are evaluating to meet the requirements mandated by the Integrated Waste Management Act include:

- Increasing the use of recycled materials

- Reducing packaging and increasing the use of reusable containers
- Reducing the generation of yard wastes and encouraging composting or other similar measures
- Purchasing repairable items
- Providing economic incentives to reduce waste generation and to recycle materials
- Providing convenient recycling programs such as curbside pickup or neighborhood recycling centers
- Promoting the efficient use of raw and manufactured materials

18.4.2.2 Mechanical Volume Reduction

Mechanical volume reduction involves physically diminishing waste volumes through compaction, baling, shredding, or other similar measures. Mechanical reduction can take place prior to disposal at the landfill or at the landfill site itself.

Compaction

The compaction of wastes can occur one or more times starting from the point of residential, commercial, or industrial generation to final disposal. Typical compaction methods include:

- Compaction units at the waste source such as under-the-counter garbage compactors in homes, and larger units capable of servicing large business or industrial refuse
- Compaction of wastes by collection vehicle, which can also maximize load capacities and collection efficiency
- Compaction of refuse at a TS
- Compaction at the landfill site during fill operations (currently in use by CCL)

Baling

Baling, or the balefill method, is a special type of compaction whereby waste material is bound into uniform-size bales prior to being placed in a fill area. Baling can result in reduction in volume. If baling occurs offsite of the landfill, economic advantages could include reduced transportation costs owing to the high density and uniform bales that increase the efficiency of transport vehicle space. Other segments of the solid waste industry have argued that the balefill method is not without its own problems. Refuse density governs the degree to which the service life of a landfill can be extended. Common densities achieved by conventional landfilling range from 1,100 to 1,300 pounds per cubic yard for in-place refuse. In some instances, these densities can be higher depending on the quality of compaction efforts and the types of refuse being received. Depending on the baling equipment, the balefill method can achieve a refuse density that could exceed 2,000 pounds per cubic yard. Even though the waste is highly compacted (dense), the bales do not resemble perfect blocks. When stacked in the landfill, air space or voids between the bales reduce the effective refuse density by approximately 5 percent. This 5 percent reduction, if accurate, would significantly increase the refuse-to-cover material volume ratio over that of a conventional landfill operation. This would mean that daily soil cover requirements could increase substantially. If the additional soil requirements were not available from excavation activities onsite, this soil would need to be imported from an offsite location.

CCL does not currently receive baled materials nor does it bale waste onsite, and the Proposed Project does not include plans to do so. In Southern California, the only operating balefill is a small landfill operation at the Pebbly Beach Landfill on Santa Catalina Island, which is approximately a 20-tpd operation. There is no balefill operating in California at the scale of the Proposed Project.

18.4.2.3 Resource Recovery

Resource recovery includes the salvaging of recyclable or valuable materials from the waste stream prior to disposal. Resources that can be recovered include reusable materials, energy in the form of LFG or through the incineration of wastes (refuse to energy process), and organic matter through composting. Paper, greenwaste/yard waste, and food waste make up the major quantity of materials targeted for recovery in the future and waste stream projections indicate that the residential sector produces the largest quantity of

materials expected to be recovered through near-term recycling programs. Materials recovery facilities combined with source-separated curbside recycling programs have been identified as the primary methods available for processing the quantities of recyclable wastes expected by county diversion programs. Diversion of greater quantities in the commercial and industrial waste sectors is also needed to achieve medium-term goals. AB 32 mandated commercial recycling programs to be implemented by 2012, and jurisdictions throughout Los Angeles County are implementing new and enhanced commercial recycling programs.

In recent years, a greater emphasis has been placed on removing and recycling organics in the waste stream, principally through food waste programs in both the residential and commercial sectors. Food waste can be composted, often on a commingled basis with other organics, such as yard waste, to produce a usable and saleable compost material for direct transport to processing and compost facilities. An increasing number of mixed organics compost facilities have been permitted in recent years, and the trend is expected to continue. In addition, in the commercial food waste sector, programs have been implemented in various areas of the state to utilize commercial food waste in publicly owned treatment works digesters to produce energy. It is anticipated that these efforts will continue to grow in the coming years.

One of the primary challenges for food waste programs throughout the state is public acceptance and participation, because it requires a significant change in past practice and has thus encountered opposition in many areas. Public agencies and private companies implementing such programs are required to undertake significant outreach and engage in aggressive public education programs to seek greater participation in these programs. It is anticipated that these programs will continue to grow and become a staple of agency diversion programs, targeting this particular organics area of the waste stream.

Recycling

Recyclable material includes paper, glass, aluminum, copper, iron and other ferrous metals, cardboard, and some plastics. The most cost-effective recycling program is one that captures recyclables before refuse is deposited in the municipal waste stream.

Composting

The composting of green wastes as well as food wastes (organic wastes decompose biologically into a stable nutrient rich humus-like material) reduces the residential and commercial waste stream destined for landfills.

An organized collection system is the most effective way to achieve a high diversion rate. Residents separate their recyclables and garden wastes from their other household wastes. Markets for compost material are developing, including markets for mixed organics compost materials. The County's Source Reduction and Recycling Element targets green (compostable) waste for diversion to beneficial uses. It is anticipated that composting programs (both traditional green waste and mixed organics operations) would constitute a significant element of overall waste reduction.

Waste reduction can also occur at the household level. The County of Los Angeles has operated a successful Smart Gardening Program for well over a decade that encourages residents to compost in their backyards, while providing discount composting bins to residents.

The proposed expansion at CCL includes its continued composting operation, and also includes a mixed organics component to facilitate mixed organics composting and the ability to provide jurisdictions with food waste program diversion options. The compost or shredded green waste can be sold for use as a soil enhancement, used by public agencies and private parties for landscaping purposes, and used onsite as daily or final cover or to augment other materials used for daily cover.

Incineration

Another method of converting waste to energy involves the direct incineration of wastes. Incineration can reduce the waste volume by 80 to 95 percent and is the most effective method known for reducing refuse volumes. Incineration, or mass burn, is also highly controversial. In most instances, the ash that remains is hazardous and must be transported and disposed of as such. Particular concerns have also been raised about

possible health effects associated with the air emissions and the ash component of the residue. Because the Los Angeles area is in nonattainment for many air emissions, permitting agency approval and public acceptance of a process that could result in further air quality degradation is unlikely. Once air pollution control systems are available that can convincingly demonstrate that no negative effects would occur, this alternative may become a viable option.

18.4.2.4 Conversion Technologies

The term "conversion technologies" refers to a wide array of technologies capable of converting post-recycled or residual solid waste into useful products, green fuels, and renewable energy through non-combustion thermal, chemical, or biological processes. Conversion technologies may include mechanical processes when combined with a non-combustion thermal, chemical, or biological conversion process. In addition to the production of locally generated renewable energy and green fuels, the use of conversion technologies in Southern California could, if proven feasible on a large scale, effectively enhance recycling and beneficial use of waste, reduce pollution such as GHG emissions, and reduce dependence on landfilling and imported and domestic fossil fuels.

Examples of conversion technologies are as follows (summarized from City of Glendale, 2014).

Thermal Gasification. Thermal processes include gasification, pyrolysis, plasma arc, and various combinations of these technologies. These processes tend to be more expensive and complex than conventional WTE or anaerobic digestion processes. Select feedstock (more homogeneous than MSW) is usually required for optimal operation of these technologies, thereby necessitating significant pre-processing at new or existing MRFs. The primary difference between thermal conversion and conventional WTE technology is that thermal decomposition of the waste occurs with either no air or insufficient air for complete combustion, which results in cleaner air emissions. Thermal processes produce intermediate products which can either be burned as fuels or used to create fuels that are used elsewhere. Thermal processes are all rapid, reducing waste to residual in a matter of minutes or seconds, rather than years in a landfill. These technologies produce less operational emissions compared to landfills due to less operation of mobile equipment.

Gasification. Gasification is the thermal processing of waste (feedstock) using heat, pressure, and/or steam to convert materials directly into a gas. This alternative requires a relatively consistent influent feedstock material (mainly organic materials), thereby necessitating significant pre-processing of the waste stream at a MRF or a pre-processing facility associated with the WTE facility. There is limited operational history and success for this technology. There is currently no commercially operating facility in the U.S. using MSW as feedstock; however, Japan uses this technology with a feedstock comprised of MSW and auto shredder waste. One plasma arc facility is in operation in Ottawa, Canada. Residual materials such as char and tar, and slag need to be disposed. The residual slag may be used as road base or construction aggregate.

Pyrolysis. Pyrolysis is the thermal processing of waste using indirect heat in the absence of oxygen. This process can be used with a wide mix of organic materials (e.g. coal, wood, and organics). However, waste degradation is not as effective as with thermal oxidation, which results in some inorganic waste not being decomposed. There is a limited operational history and success using pyrolysis with mixed organics. There is also a limited history of treating the resulting syngas for use in energy conversion equipment. Residual char and liquids need to be disposed or further refined. It is not clear if this process is economical or if capacity can be met. A 150-TPD plant is reportedly being built in Green Bay, Wisconsin.

Anaerobic Digestion. Anaerobic digestion (AD) is the bacterial breakdown of organic materials in the absence of oxygen. Organisms gradually break down complex organic molecules into methane, carbon dioxide, hydrogen sulfide, and gaseous and solid residuals. This technology is predominantly applied to organic wastes (alone or with composting to biostabilize the process residue). Pre-processing of the feedstock at a MRF is needed to remove inorganic materials. Potential feedstocks are MSW-derived

organic materials, wastewater treatment biosolids, manure, and food waste. Self-contained systems can achieve complete decomposition in a matter of days. The residuals from this process include inorganics, non-degradable organics, and biomass. These residuals (which can reach 25% or higher) require disposal, typically at a landfill. The methane produced during the process can be burned, compressed, or liquefied for fuel. While some medium-sized facilities exist in Europe, it is not clear if such technology can be economical in Southern California. AD is less efficient at reducing organic materials than thermal processes. AD does not destroy plastic, and has limited efficiency in destroying chemical compounds in woody material.

Conversion technologies have been used to manage solid waste in Europe, Israel, Japan, and other countries in Asia, but are not yet in commercial operation in the United States.

Existing County Efforts to Evaluate and Promote Development of Conversion Technologies

As described previously, Los Angeles County residents and businesses generate approximately 21.5 million tons of materials per year, with approximately 60 percent being diverted through source reduction and recycling away from disposal. This results in over 8.6 million tons of trash left for disposal every year, a number that is expected to grow as a result of continued population and economic growth in the region. With the certainty that in-county landfill capacity will ultimately be diminished or exhausted in the long term, and will be substantially diminished in the short term, the County of Los Angeles recognizes the need to develop technically, economically, and environmentally feasible conversion alternatives to landfills within the county.

The Los Angeles County Board of Supervisors has designated LACDPW as the lead county agency advising the Los Angeles County Board of Supervisors on waste management issues and responsible for the County's compliance with AB 939 mandates. This includes the waste diversion mandate for the unincorporated areas, as well as countywide solid waste planning responsibilities, in concert with the cities and the Los Angeles County Integrated Management Task Force (Task Force).

As part of its continuing efforts to evaluate and promote the development of conversion technologies, the County incorporated into the land use permit for PHL a condition requiring the owner/operator of the landfill, LACSD, to provide up to $100,000 in funding each year for the remainder of the landfill's lifespan to study conversion technologies; and requires LACSD to consider funding a pilot conversion technology facility, should a suitable technology be identified. The land use permit approved by the Los Angeles County Board of Supervisors also requested the Los Angeles County Solid Waste Management Committee/Task Force form the Alternative Technology Advisory Subcommittee (Subcommittee), a multi-stakeholder group whose mission is to thoroughly evaluate and promote the development of conversion technologies.

Continuing this model, the County adopted a land use permit for the Sunshine Canyon landfill, owned and operated by Browning-Ferris Industries, which included a condition for providing $200,000 per year in funding for 10 years. This funding will continue the work of the Subcommittee, Task Force, and LACDPW in implementing recommendations and advancing the vision of the Board of Supervisors to work toward the eventual elimination of landfills as the primary disposal modality.

To further this goal in the near term, LACDPW is working with the Task Force and the Subcommittee to facilitate development of a fully operational conversion technology demonstration facility in Southern California. The goal of the County's project is to demonstrate technical, environmental, and economic benefits of conversion technologies through design, construction, and operation of a facility in Southern California to forge permitting and legislative pathways for conversion technologies and promote development of future projects.

In July 2006, the County contracted with Alternative Resources, Inc. (ARI) to further advance its efforts to facilitate development of a conversion technology demonstration facility (Phase II). Key Phase II services provided by the ARI team included:

- An independent evaluation and verification of the qualifications of selected technology suppliers and the capabilities of their conversion technologies

- An independent evaluation of candidate MRF/TS sites, to determine suitability for installation, integration, and operation of one of the technologies
- A review of permitting pathways
- Identification of funding opportunities and financing means
- Identification of potential county incentives (i.e., supporting benefits) to encourage facility development amongst potential project sponsors
- Negotiation activities to assist these parties in developing project teams and a demonstration project

Long-Term Development of Conversion Technologies

The County's phased future development program activities may include the following:

- Re-evaluating the conversion technologies marketplace to consider new and emerging developments and pursuing development of the most technically and environmentally effective technologies, focusing on identifying potential sites within Los Angeles County, including key potential sites identified in Phase II.
- Developing partnerships with local cities within Los Angeles County interested in developing conversion technology facilities within or adjacent to their borders.
- Facilitating development of commercial-scale conversion technology facilities designed to manage Los Angeles County's waste stream. These activities can occur concurrently with the continued development of demonstration projects.

Potential MRF/TS Sites Recommended for Phase II Analysis by the County of Los Angeles

The County's Phase I study recommended six MRF/TS facilities as preferred locations for development of a conversion technology demonstration facility. Early in the Phase II process (July 2006), the owner/operators of the six potential sites were contacted, and site visits were conducted to determine interest in continued participation in the County's demonstration project. Four of the original six sites expressed a willingness and ability to participate. Two of the sites dropped out: the Central Los Angeles Recycling Center and Transfer Station, because it is a potential site for the City of Los Angeles conversion technology project; and the proposed facility in Santa Clarita because of uncertainty regarding the approval of the entire industrial development that would have encompassed the MRF/TS. Late in the Phase II process, the Rainbow Disposal Company, Inc. MRF, was added to the project. The MRF/TS sites include:

- Del Norte Regional Recycling and Transfer Station (Oxnard)
- Perris MRF/TS Riverside County (Perris)
- Rainbow Disposal Company, Inc. MRF (1) Orange County (Huntington Beach)
- Robert A. Nelson Transfer Station (Unincorporated Riverside County)
- MRF Riverside County (Unincorporated)

Four sites were found to be technically and environmentally suitable for co-location of a conversion technology project: Del Norte Regional Recycling and Transfer Station (Oxnard); Robert A. Nelson Transfer Station and MRF (Unincorporated Riverside); Perris MRF/Transfer Station (Perris); and Rainbow Disposal Company, Inc. MRF (Huntington Beach). Community Recycling/Resource Recovery, Inc. MRF/TS in Los Angeles was limited by available space and is faced with an active local enforcement agency (LEA) cease and desist order that may pose a constriction for project development at this site. The Community Recycling site was not recommended for this project because of those constraints. However, Community Recycling has access to a larger site, which may be suitable for consideration in a future phase of Los Angeles County's project development activities (Phase III).

With only one exception, the MRF/TS sites have continued to express a willingness and ability to partner with a technology supplier and participate in Los Angeles County's conversion technology demonstration project. The Del Norte Regional Recycling and Transfer Station Ventura County in Oxnard has not yet committed to participate in the Los Angeles County's project. As the only publicly owned MRF/TS under consideration, the

Del Norte site requires a more formal and lengthier process for making a project commitment. In addition, the City of Oxnard has received and is evaluating a project offer that could result in development of the land adjacent to the MRF/TS, which was identified for location of a conversion technology facility. The future of Oxnard's participation in the County's project is uncertain and appears unlikely.

Status of Conversion Projects in Los Angeles County

On April 20, 2010, the Los Angeles County Board of Supervisors approved Memoranda of Understanding for three conversion technology demonstration projects and awarded a contract for consultant services for the demonstration and commercial phases of the Southern California Conversion Technology Demonstration project, which is intended to foster solid waste alternatives to landfills within the County of Los Angeles.

At that time, the Board also instructed the Director of Public Works, in coordination with appropriate stakeholders, to assess the feasibility of developing a conversion technology facility at one or more County landfills; to identify other potentially suitable sites within the County of Los Angeles, and to report back to the Board within 6 months.

In October 2010, Public Works submitted a preliminary siting assessment to the Board identifying potential project sites proposed by 11 municipalities and 9 private companies, and committed to providing the Board with a status report on the efforts every 6 months. Since that time, LACDPW has worked with interested stakeholders to evaluate additional possible project locations within the county.

On June 22, 2011, LACDPW released two Requests for Expressions of Interest (RFEI) to technology vendors and potential project financial partners. The RFEIs were widely distributed and LACDPW received several responses. Companies that meet the County's list of minimum criteria will be included in a County database that will be used by LACDPW and will be made available to public and private project developers, specifically those who have expressed interest in developing a project and submitted a site to Public Works for evaluation.

On September 25, 2012, the Los Angeles County Board of Supervisors approved a motion to work with key stakeholders to pursue and support the passage of legislation and regulations to encourage development of conversion technologies, including appropriate incentives for producing renewable energy, reducing landfill disposal, and producing low carbon fuels.

18.4.2.5 Feasibility of Conversion Technologies

Diversion Potential and Conversion Capability

The conversion technologies have the potential to achieve significant diversion of MRF residue and post-recycled MSW from landfill disposal, ranging upwards from approximately 87 percent by weight of the waste received, provided reliable markets can be identified and developed for secondary products. Conversion technologies operate in 28 countries with varying environmental rules and regulations, including: Australia, Europe, Japan, South Korea, South Africa, and the United States. However, it is unclear at this time whether such secondary markets can be successfully developed in the United States.

The technologies have the capability of recovering recyclables, converting waste into intermediate fuel products (e.g., biogas, syngas, steam, biodiesel), efficiently using the fuel products onsite for power generation, and producing secondary material products. Onsite power generation is currently the proposed alternative because of strong market demands for electricity, particularly from renewable energy sources.

Competitiveness of Estimated Tipping Fees

LACDPW reports that tipping fees needed to support a conversion technology project range from approximately $50 to $70 per ton. The rate may actually be higher; a precise or realistic figure is not actually known. While these estimated tipping fees may be competitive with the future tipping fees associated with rail haul and landfill disposal, they are significantly greater than current waste disposal costs in Los Angeles County. To support financing and successful project development and operation, there may be a need to "bridge" this economic gap, if any, until such time as market waste disposal fees equal those for conversion

technologies. Many alternatives could be considered to help meet this need, including one or more of the following:

- Funding provided by LACSD, consistent with the conditions of the PHL CUP
- Funding provided by Browning-Ferris Industries, consistent with the conditions of the Sunshine Canyon CUP
- Funding provided by the cities in Los Angeles County and the County itself
- Development of public waste supply agreement (or private agreement with public "back stop") with supporting tip fees
- Increasing the amount of the project financing to provide surplus funds to "subsidize" initial tip fees being paid
- Instituting a ramped tipping fee (i.e., a structured annual increase that is kept in place until the prices charged cover the cost incurred, similar to the funding subsidy formulated by LACSD for the Waste by Rail Project)
- Instituting a "green fee" to be paid by MRF/TS customers for waste processed at the conversion technology facility
- Eliminating the solid waste management fee (currently $0.86 per ton) for waste originating in Los Angeles County going to the conversion technology facility, to provide a reduced tip fee for waste delivered to the conversion technology facility
- Increasing the solid waste management fee (currently $0.86 per ton) imposed on each ton of solid waste being disposed to provide a dedicated funding source for promoting development of conversion facilities
- Providing tax incentives that may result in lower facility construction or operating costs
- Successful acquisition of state and federal grants to augment other funds as discussed above

The actual level of public and private support needed and alternatives to address needed support would require evaluation in the next step of this process, when firm, competitive offers from the project developers are made, and proposed tip fees and project-specific market conditions are known.

Feasibility of Development

Development hurdles for conversion technologies in California include development, land acquisition, and capital/labor costs, especially when compared to the current, relatively more efficient and thus inexpensive cost of landfill disposal; the lack of a clear permitting and regulatory pathway in California; a lack of diversion credit, renewable energy credit, or other incentives for the development of emerging technologies; and potential misconceptions regarding the performance of these technologies. There is also an active network of well-funded organized opposition to the development of conversion facilities, which has fought and blocked development of facilities throughout the state. One of the common issues in opposition campaigns to development of conversion technologies is characterizing the conversion modality (i.e., plasma arc) as "incineration" to develop a public opposition to employment of facilities in local areas.

18.4.2.6 Environmental Analysis

In the interest of providing a discussion of potential impacts associated with implementation of Alternative B, impacts associated with an AD facility are summarized from the Statewide Anaerobic Digester Facilities for the Treatment of Municipal Organic Solid Waste Draft Program EIR (CalRecycle, 2011) in Table 18-3.

TABLE 18-3
Alternative B: Waste Reduction and Alternative Technologies
Potential Environmental Impacts

Environmental Resource Area	Alternative B: Waste Reduction and Alternative Technologies
Land Use	AD facilities associated with Alternative B would likely be co-located at existing or new permitted solid waste facilities or as stand-alone AD facilities in areas zoned for industrial or solid waste handling activities. Therefore impacts to land use are considered minimal.
Geology and Hydrogeology	Under Alternative B, impacts related to geology and hydrology would be similar to or less than the Proposed Project. As with the Proposed Project, it is assumed that the AD facilities would be constructed to meet the minimum requirements of Section 20164(a) of Title 27 CCR. Similar to the Proposed Project, potential geotechnical constraints could be mitigated through proper engineering design.
Surface Water Drainage	Under Alternative B, impacts related to surface water drainage and water quality would be similar to or less than the Proposed Project. This alternative would involve constructing a new facility involving grading and excavation activity and alteration of topography and drainage patterns. However, with mitigation, hydrology and water quality impacts to surface and groundwater could be minimized to a less-than-significant level.
Water Quality	See Surface Water Drainage above.
Biological Resources	Alternative B would likely result in fewer impacts to biological resources compared to the Proposed Project, given the smaller size required for an AD facility. However, the magnitude of impacts would depend on the size, type, and location of the new facility.
Cultural and Paleontological Resources	Alternative B would likely result in fewer impacts to cultural resources compared to the Proposed Project, given the smaller size required for an AD facility. However, the magnitude of impacts would depend on the size, type, and location of the new facility.
Traffic and Transportation	Alternative B would likely result in a fewer project-related trips than the Proposed Project, in large part because an AD facility would handle much less solid waste than the Proposed Project. Impacts to transportation and traffic from Alternative B would require mitigation to minimize potentially significant impacts and would therefore likely be similar to the Proposed Project.
Air Quality	Under Alternative B, construction related emissions would arise from a variety of activities, including: grading, excavation, road construction, and other earth moving activities; travel by construction equipment and employee vehicles; exhaust from construction equipment; architectural coatings; and asphalt paving. As with the Proposed Project, impacts would likely occur within the South Coast Air Basin. Emissions associated with operations would depend on several factors, such as the size and type of AD facility, equipment needs, increased traffic, and post processing of the biogas. Operational sources of fugitive dust would primarily be processing equipment and truck movement over paved and unpaved surfaces. Although there will be emissions associated with these sources at AD facilities, the operation of these facilities would divert organics out of landfills. The AD facilities could also generate biogas to replace fossil fuels for electricity production or for vehicle transportation. AD facilities have the potential to significantly contribute positively towards the state's Global Warming Solutions Act goals. These technologies achieve significant diversion from landfill disposal and convert organic waste material into renewable energy, fuels and other products, potentially resulting in a net reduction in GHG emissions. The net generation of emissions can be reduced when considering the life-cycle impact of this technology. By design, an AD facility would offset emissions from other sources, including the transportation of waste to remote disposal that is no longer necessary, as well as the combustion of fossil fuels offset by the generation of renewable energy in the form of electricity or green fuels. Co-location of AD facilities with MRFs maximizes this transportation reduction of residual solid waste. When factoring in diversion of materials from disposal as well as offsets from transportation and energy production, AD facilities are likely to reduce net emissions.
Greenhouse Gas Emissions and Climate Change	See Air Quality above.

TABLE 18-3
Alternative B: Waste Reduction and Alternative Technologies
Potential Environmental Impacts

Environmental Resource Area	Alternative B: Waste Reduction and Alternative Technologies
Noise	Alternative B has the potential to impact noise sensitive receptors, depending on where the facility is located. However, AD facilities associated with Alternative B would likely be co-located at existing or new permitted solid waste facilities or as stand-alone AD facilities in areas zoned for industrial or solid waste handling activities. Therefore, the noise impact is assumed to be similar to the Proposed Project, and less than significant.
Public Services and Utilities	Similar to the Proposed Project, Alternative B would not create a significant new demand for public services, including law enforcement, fire protection, or educational services. For this reason, Alternative B would result in a less-than-significant impact to public services. Alternative B would operate using similar infrastructure as the Proposed including water, wastewater, and electrical. However, new infrastructure would be required as part of the development of an AD facility. This could result in impacts associated with the construction of new infrastructure that would be greater than that of the Proposed Project. However, it is assumed this types of infrastructure would be part of a project plan submitted for local site plan review and would be constructed to the standards of the applicable local jurisdiction which would reduce impacts to a less-than-significant level.
Visual Resources	Alternative B has the potential for landform alterations, depending on where the facility is located. However, AD facilities associated with Alternative B would likely be co-located at existing or new permitted solid waste facilities or as stand-alone AD facilities in areas zoned for industrial or solid waste handling activities. Therefore, impacts to visual resources are assumed to be similar to the Proposed Project, and less than significant.
Environmental Justice and Socioeconomics	Alternative B has the potential for impacts associated with environmental justice and socioeconomics, depending on where the facility is located. However, AD facilities associated with Alternative B would likely be co-located at existing or new permitted solid waste facilities or as stand-alone AD facilities in areas zoned for industrial or solid waste handling activities. Therefore, impacts associated with environmental justice and socioeconomics are assumed to be similar to the Proposed Project, and less than significant.
Meet Project Objectives?	No
Reduce Significant and Unavoidable Impacts?	No

18.4.2.7 Waste Reduction and Alternative Technologies Conclusion

The Waste Reduction and Alternative Technologies Alternative is not considered to be a feasible alternative to the Proposed Project because it alone cannot completely accomplish the primary purposes and objectives of the Proposed Project. This conclusion is based on many of the same reasons as previously described for Alternative A, and includes the following:

- Alternative waste reduction technologies will be employed as required by AB 939 and County policy; however, their implementation (alone or in combination) does not completely offset the ultimate need for the expansion of CCL or the expansion of other landfill facilities. The LACDPW analysis of nine alternative scenarios in its assessment of landfill capacity in the 2012 Annual Report demonstrates that even with an assumed optimistic and aggressive use of conversion technologies with increased diversion to 75 percent, expanded landfill capacity is necessary in Los Angeles County to avoid capacity shortfalls.
- Without additional landfill capacity, CCL would not maximize the value of the operations or afford the County of Los Angeles the opportunity to use CCL's location as a potential expansion site to develop needed landfill disposal capacity.
- The positive environmental benefits of conversion technologies do not eliminate the need for additional landfill capacity. Alternative waste reduction technologies are, however, capable of extending the operational capacity of landfills and are complementary activities to traditional MSW disposal.

- The two existing WTE facilities within the greater Los Angeles region have insufficient capacity to handle the existing 6,000 tpd for the existing landfill, and cannot handle the 12,000 tpd proposed for the Proposed Project. Thus, conversion technology alternatives would necessitate construction of large, significant new WTE facility in the region capable of handling 10,000 tpd or more. The feasibility of siting such a facility is highly uncertain, as only three such facilities have been completed in California and none in the last 25 years. Consequently, this alternative is not feasible as an alternative to the Proposed Project.

18.4.3 Alternative C: Alternative New Site in Northern Los Angeles County

The Proposed Project is the proposed expansion of an existing landfill on property owned by the applicant, a private entity, and the concept of a new landfill to be sited in an alternative location would not meet the most basic objectives of the Proposed Project; and is otherwise not feasible because the applicant has no means of eminent domain to acquire the lands of others for its project purposes. While eminent domain is not available to a private applicant, it is possible to acquire lands through customary commercial dealings.

CEQA does not require the study of an alternative location to a project proposed by a private applicant. This DEIR, however, evaluates an alternative offsite location as potentially feasible, based on the Proposed Project's main objective to develop significant new disposal capacity within northern Los Angeles County.

18.4.3.1 Feasibility

For an alternative location for the Proposed Project to be considered feasible, the site would have to be suitable for landfill development, and meet the detailed siting and design criteria established in Title 27 CCR. These criteria would preclude any property that would not meet the Title 27 landfill siting requirements. In general, the State of California siting regulations (which are based on the federal Subtitle D regulations) restrict landfills from locating in areas near runways, within 100-year floodplains, in unstable terrain, in wetlands, or in active fault zones. Site feasibility is further determined by the landfill operator's ability to acquire, control, or otherwise have access to suitable properties. The applicant does not own or control properties in the vicinity of the Proposed Project location suitable for landfill development—the applicant does not own any other property in the general vicinity of the CCL facility.

The specific requirements for development of a landfill in the northern area of Los Angeles include:

- Identifying available lands which are of sufficient size—at least 500 acres—to accommodate a landfill disposal facility, including ancillary functions such as access roads, waste receiving facilities, gatehouse, scales, LFG management and landfill gas-to-energy facilities, soil stockpile areas, and potential borrow areas from which to utilize soils for operations and closure purposes. A section of land (640 acres) would generally be a reasonably-sized area to consider for a landfill site which could accommodate CCL operations. The primary screening level criteria for this element of the alternative new landfill is the application of federal and state MSW landfill siting criteria, first established in the federal Subtitle D regulations promulgated in 1991 and effective on October 9, 1993 (40 *Code of Federal Regulations* Part 268). The California Environmental Protection Agency (CalEPA) has an approved state implementation program for administering the Subtitle D requirements within California, found in Title 27 CCR, Chapter 3. The siting criteria include that new or expanded landfills will be located where site characteristics provide adequate separation between nonhazardous solid wastes and waters of the state; all new landfills must be sited, designed, constructed, and operated to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater; new landfills must be located where soil characteristics, distance from waste to groundwater, will ensure no impairment of beneficial uses of surface water or of groundwater; new landfills and lateral expansions of landfills that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used by only piston-type aircraft, must demonstrate that the units are designed and operated so that the landfill does not pose a bird hazard to aircraft; new landfills and expansions of existing landfills shall not be located on a known Holocene fault; new landfills and expansions of existing landfills shall not be located in areas of rapid geologic change.

- Identifying specific sites within northern Los Angeles County based on suitability of access, ability to provide electrical power, and other infrastructure needs, including the water supply. Transportation infrastructure considerations and challenges must be addressed for a new site to be viable.
- Conducting hydraulic and hydrologic modeling of the proposed landfill site and the adjacent watershed to determine a landfill project's potential to exacerbate existing flooding problems by increasing the extent, depth, and duration of surface water inundation. Any such project-related flooding impacts would require the development and operation of flood control facilities to protect onsite and adjacent lands and properties.
- Undertaking detailed site-specific geologic and hydrogeologic investigations on the proposed site once it is identified and placed under option or other ownership interest for purposes of performing due diligence studies on the suitability of the parcel(s) for solid waste landfill purposes. The due diligence would include geologic boring and trenching to determine the suitability of soils, both for construction purposes but also with respect to the overall stability of soils and slopes in and around the parcel(s); establishment of a network of groundwater monitoring wells, monitored for at least 4 to 6 quarters, to determine water quality and hydrogeologic characteristics of the site, depth and occurrence of groundwater; and the surface water features and hydrology of the site.
- Undertaking field-level reconnaissance and surveys for threatened, listed, and endangered plant and animal species under the state and federal endangered species acts. As with any potential site, there is a potential for several species and habitat areas to be located in a given area. Detailed site-specific investigations for species and habitat will be necessary. In addition, the reconnaissance and surveys would also include evaluation of critical and other protected habitat for threatened and endangered species.
- Filing of an application for a designation in the CIWMP and General Plan, together with any related zoning requirements, and preparation of at least a program-level EIR for purposes of complying with CEQA for these discretionary decisions by the County of Los Angeles. The designation in the CIWMP requires a submission of the known details of the proposed facility to the Task Force for review and comment by the Task Force. (See, *California Public Resources Code* Section 50001). An applicant may wish to proceed with a CIWMP designation and General Plan Amendment to ensure that the identified site, after the due diligence period of over a year, is acceptable as a designated site in CIWMP and the General Plan. The public may also posit initiatives under the initiative power to either designate or preclude sites from being considered in the CIWMP and the General Plan. The process of securing the site within the CIWMP and the General Plan, together with the required CEQA review at a program-level EIR, can take between 24 to 36 months even under favorable conditions, without protracted opposition, legal challenges to various stages of the process, and potentially EIR-related litigation. There are currently no potential landfill sites in northern Los Angeles County identified in the CIWMP.
- Applying for a CUP from Los Angeles County to establish a solid waste landfill facility. The County would be the lead agency under CEQA, and as such, must require preparation of a project-level EIR, just as is the current case with the Proposed Project DEIR under review, to evaluate the proposed action. The CUP and EIR process can take from 4 to 6 years, or longer, as has been documented in other areas of the state addressing new or expanded landfill applications. As an example, the applicant for a lateral expansion of the Potrero Hills Landfill in Solano County has been in the CUP and EIR process for over 12 years, and the site has not received all final required permits at this writing due to the pendency of litigation. Mandamus litigation challenging the final permit for the Potrero Hills project was decided in favor of the applicant in May, 2014 by the state court of appeal, but the judgment is not yet final at this writing and is subject to potential further appeals. The Eagle Mountain Landfill was initially commenced in 1989, received final state permits in 1999, but was set back by continued litigation challenging a BLM land exchange and land transfer to the applicant. The Eagle Mountain project was in the permitting process with associated litigation for over 20 years and the project is now no longer viable. Its sponsor entered bankruptcy in 2011. Every site and circumstance is unique, but for planning and discussion purposes, a 4- to 6-year timeframe is likely highly optimistic and potentially not realistic. The EIR may be challenged in court once certified as

adequate and in compliance with CEQA, by other permitting agencies, as discussed below. Experience in California permitting and environmental review indicates that the 4- to 6-year period may be considerably longer if there is litigation activity challenging the EIR and the lead agency approvals.

- Preparing a joint technical document (JTD), which is a multi-disciplinary technical document which serves as a permit application and background technical document for several agency permits. The JTD describes the waste disposal plan, the access routes, and monitoring plans, together with descriptions of the characteristics of the site in all technical aspects including geology, hydrogeology, hydrology, air quality, water quality, and site suitability. The JTD also demonstrates that the landfill site meets all of the siting and design/construction/operational standards, prescriptive and performance, embodied in the applicable regulations of the South Coast Air Quality Management District (SCAQMD), the Los Angeles Regional Water Quality Control Board (RWQCB), the LEA, and CalRecycle.
- Applying for and obtaining a waste discharge requirements (WDR) permit from RWQCB.
- Applying for and obtaining a solid waste facilities permit (SWFP) from the LEA, to also be concurred in by CalRecycle.
- Applying for and obtaining an authority to construct and permit to operate from the SCAQMD.
- Applying for and obtaining other permits, which may be required, including without limitation, a United States Corps of Engineers (USACE) Section 404 permit; Federal Endangered Species Act permit; Clean Water Act Section 401 certification; and Streambed Alteration Agreement from the California Department of Fish and Wildlife.

Experience indicates that the process of searching for suitable sites, negotiating options or purchase agreements with one or more landowners, and completing due diligence actions required will take a minimum of 24 to 48 months, under favorable conditions.

The time for completing the JTD and obtaining all required environmental agency permits to construct and operate a new landfill would likely take as long as 1 to 2 additional year(s) after the project-level EIR is certified by the lead agency and a land use/CUP is obtained, assuming no litigation that delays the certification of the EIR or delays the obtaining of the permits from various agencies. The JTD is the essential prerequisite to obtaining WDRs and a SWFP. History involving landfill land use applications throughout the state demonstrates that litigation is a highly probable and realistic obstacle and occurs in most landfill permitting proceedings. Each of the agencies has an independent statutory and regulatory basis for issuance of the permits involved, creating an independent opportunity for litigation challenges.

The California statutory and regulatory requirements for development of new landfills embodies a process which results in the planning and permitting for a new landfill easily taking up to 12 years or more to complete. The history of permitting landfills in California in the last 25 years demonstrates that few are actually approved, let alone built and operated. Since 1985, there have been five new landfills permitted in California on non-tribal lands (Potrero Hills Landfill in Solano County [1986]; Frank R. Bowerman Landfill in Orange County [1991]; Keller Canyon Landfill in Contra Costa County [1992]; Mesquite Regional Landfill in Imperial County [1999]; and Eagle Mountain Landfill in Riverside County [1999]). Of those five, three have been built (Potrero, Bowerman, and Keller Canyon). Mesquite, which had been scheduled to be placed into service to facilitate waste-by-rail from Los Angeles County, is not being developed at this time. The fifth site, Eagle Mountain Landfill, has been blocked by litigation after nearly 20 years in the permitting process.

LACSD owns Mesquite, located in the southeastern California desert. Bowerman Landfill is in Orange County. Potrero Hills and Keller Canyon are the only new Northern California sites approved and constructed in the last 30 years. The Eagle Mountain Landfill project was started in 1989. Keller Canyon was started in 1985 as a proposed “Central Landfill” in Contra Costa County, southwest of the City of Pittsburg. The Keller Canyon Project took 7 years to complete and open, and was “fast-tracked” as a result of the then-state California Integrated Waste Management Board having issued a compliance order to Contra Costa County requiring the

development of a new landfill to replace an existing landfill. The expansion application for Potrero Hills Landfill was filed in March 2002, over 11 years ago.

Experience locally and throughout the state demonstrates that siting and permitting a solid waste landfill is a time consuming, expensive proposition that can easily take between 10 to 12 years or more, without guarantee of a successful or even partially successful result.

18.4.3.2 Environmental Analysis

Table 18-4 provides an analysis of the potential environmental impacts of constructing an alternative new site in northern Los Angeles County.

TABLE 18-4
Alternative C: Alternative New Site in Northern Los Angeles County
Potential Environmental Impacts

Environmental Resource Area	Alternative C: Alternative New Site in Northern Los Angeles County
Land Use	The existing project site is designated as a solid waste facility in the County's General Plan. In comparison, Alternative C would likely require an amendment to the Los Angeles County General Plan for the parcel(s) in which the landfill would be located, and would also require an amendment to the County's Siting Element. This inconsistency is considered a significant impact and greater in magnitude than that of the Proposed Project.
Geology and Hydrogeology	The impacts related to geology and soil resources would likely be similar for Alternative C as compared to the Proposed Project. As with the Proposed Project, it is assumed that the new landfill would be constructed to meet the minimum requirements of Section 20164(a) of Title 27 CCR. Similar to the Proposed Project, potential geotechnical constraints could be mitigated through proper engineering design.
Surface Water Drainage	Under Alternative C, impacts related to surface water drainage and water quality would be greater than the Proposed Project. This alternative would involve constructing a new landfill, involving significant grading and excavation activity and alteration of topography and drainage patterns. Alternative C would require the preparation of an Industrial SWPPP to minimize erosion and other water quality impacts. With mitigation, hydrology and water quality impacts to surface and groundwater could be minimized to a less-than-significant level.
Water Quality	See Surface Water Drainage above.
Biological Resources	Alternative C would likely result in greater impacts to biological resources compared to the Proposed Project. This alternative assumes that a new landfill would be constructed at an alternative location, resulting in a significant amount of new land disturbance compared to the Proposed Project. The magnitude of impacts would depend on the location of the new landfill.
Cultural and Paleontological Resources	Alternative C would likely result in greater impacts to cultural and paleontological resources compared to the Proposed Project. This alternative assumes that a new landfill would be constructed at an alternative location, resulting in a significant amount of new land disturbance compared to the Proposed Project. The magnitude of impacts would depend on the location of the new landfill.
Traffic and Transportation	Alternative C would likely result in a greater number of project-related trips than the Proposed Project because it would be a new facility, as compared to an expansion of an existing operation. However, the impacts to transportation and traffic from Alternative C would require mitigation to minimize potentially significant impacts and would therefore likely be similar to the Proposed Project.
Air Quality	Under this alternative, the same operational characteristics are assumed for the Proposed Project; however, if the landfill were constructed outside of the South Coast Air Basin, Alternative C would avoid the significant air quality impact associated with the Proposed Project. However, project-related mobile source emissions would likely be greater than the Proposed Project as a result of the increased distances for haul truck trips. In this context, this alternative has the potential to generally increase air emissions as a result of new construction and longer travel distances. Furthermore, if Alternative C were constructed within the South Coast Air Basin, the project would result in a significant air quality impact similar to the Proposed Project.

TABLE 18-4
Alternative C: Alternative New Site in Northern Los Angeles County
Potential Environmental Impacts

Environmental Resource Area	Alternative C: Alternative New Site in Northern Los Angeles County
Greenhouse Gas Emissions and Climate Change	Under Alternative C, the additional vehicle miles from the transport of the waste to the other landfills would result in additional GHG emissions from mobile sources. The impacts to global climate change from Alternative C would likely be greater than those of the Proposed Project, and are potentially significant.
Noise	Alternative C has the potential to impact noise sensitive receptors, depending on where the facility is located. It is assumed that the landfill would be located in a relatively remote area so as to avoid nuisance issues associated with potential sensitive receptors; therefore, the noise impact is assumed to be similar to the Proposed Project, and less than significant.
Public Services and Utilities	Similar to the Proposed Project, Alternative C would not create a significant new demand for public services, including law enforcement, fire protection, or educational services. For this reason, Alternative C would result in a less-than-significant impact to public services. Alternative C would operate using similar infrastructure as the Proposed Project that supports the landfill operation, including water, wastewater, and electrical. However, new infrastructure would be required as part of the development of a new landfill. This could result in impacts associated with the construction of new infrastructure that would be greater than that of the Proposed Project.
Visual Resources	Development and operation of a new landfill at an alternative location would likely result in greater visual impacts than the Proposed Project. In contrast to the Proposed Project, where the existing landfill is an established and accepted part of the landscape, Alternative C would result in entirely new land disturbance, which would likely significantly alter the visual landscape in an area where currently no landfill exists. Additionally, depending on the specific site location more visual disturbance could occur associated with infrastructure improvements that may be necessary to serve the new landfill, such as roadways and utilities. Alternative C would also introduce additional nighttime lighting likely where none currently exists. The impacts to visual resources from Alternative C would be greater than those of the Proposed Project.
Environmental Justice and Socioeconomics	Alternative C has the potential to result in environmental justice and socioeconomics impacts, depending on where the facility is located. It is assumed that the landfill would be located in a relatively remote area so as to avoid environmental justice and socioeconomics impacts. Therefore, the impact is assumed to be similar to the Proposed Project, and less than significant.
Meet Project Objectives?	No
Reduce Significant and Unavoidable Impacts?	No

18.4.3.3 Alternative New Site Conclusion

The Alternative New Site in Northern Los Angeles County is not considered to be a feasible alternative to the Proposed Project because it neither accomplishes the primary purposes and objectives of the Proposed Project nor avoids or substantially lessens the significant impacts associated with the Proposed Project, based on the following considerations:

- Alternative C would take 10 to 15 years to ultimately permit and develop, but there is no certainty that such a site would be approved and assured waste disposal capacity is required now and in the foreseeable future.
- Alternative C would not achieve most of the basic project objectives, such as expanding CCL with additional capacity and resource recovery operations and maximizing the value of the operations.
- Alternative C would not provide cost-effective disposal capacity through continued operation and development of the existing CCL facility; nor prevent premature closure of the landfill with underutilized remaining permitted airspace capacity.

- Alternative C would not continue to provide landfill waste diversion programs that are relied upon by many local cities and communities in achieving state-mandated goals and
- Alternative C would result in potentially more environmental impacts associated with constructing an entirely new facility, including potential impacts to land use, biological resources, cultural resources, air quality, and greenhouse gas emissions.

18.5 Comparison of Alternatives

None of the project alternatives would both meet most of the Proposed Project objectives and avoid, or substantially lessen, the significant effects of the Proposed Project as required by Section 15126(d) of the CEQA guidelines. It can be concluded that only the No Project Alternative would avoid the landform alteration effects of the Proposed Project. However, the No Project Alternative shifts daily operational impacts of landfilling operations to other sites, and recognizes that additional capacity has to be created in the system to handle the waste from CCL. In addition, the transportation impacts and associated GHG impacts of transportation on one or more distant landfills, have to be considered as significant impacts of the No Project Alternative. The No Project Alternative in effect defeats the important objectives of the Proposed Project, the development of substantial additional disposal capacity to serve the region's and Los Angeles County's needs.

The Waste Reduction and Alternative Technologies Alternative provides several worthwhile and important elements of source reduction and diversion to try to reduce the overall contribution to the waste stream, as well as providing alternative methods of disposal. While the concepts are valued, not all have been demonstrated to be feasible for a variety of reasons. In the context of Los Angeles County, which is projected to see an increase of 56 percent in landfill capacity demand in spite of aggressive recycling and source reduction programs, this alternative cannot be considered as a feasible means to eliminate the need for the Proposed Project.

The development of a new landfill in the northern Los Angeles County area has several important steps which must be undertaken, that even under the most favorable conditions as noted above will take on the order of 12 years or longer. Thus, although an offsite new landfill alternative may appear to some to be an attractive alternative, the actual process of locating, identifying, and ultimately permitting such a project is a very expensive, time-consuming process that cannot be achieved within the critical timeframe necessary for development of additional landfill disposal capacity, the primary objective of the Proposed Project. As such, a new site in northern Los Angeles County is simply not a feasible alternative to the Proposed Project even under the most favorable circumstances.

18.6 Environmentally Superior Alternative

From among the alternatives evaluated, CEQA requires that this DEIR identify the environmentally superior alternative. Based on the discussion of the various alternatives, the environmentally superior alternative is Alternative A, the No Project Alternative. The No Project Alternative involves no construction, and operation would continue according to existing conditions until site closure between 2015 and 2019. The No Project Alternative would not involve any development or the disturbance of resources, unlike Alternatives B and C. Therefore, the No Project Alternative would be the Environmentally Superior Alternative, although it would not achieve the project objectives.

The State CEQA Guidelines Section 15126.6(e)(2) states, "If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." The potential impacts of implementing Alternatives B and C would depend on the location, size, and type of facility constructed. However, it anticipated that Alternative B would have lower overall adverse environmental effects compared to Alternative C. *The Statewide Anaerobic Digester Facilities for the Treatment of Municipal Organic Solid Waste Draft Program Environmental Impact Report* (CalRecycle, 2011) determined that all of the potential environmental impacts from construction of an AD facility could be mitigated to a less-than significant level. The Preliminary EIR also noted that the development of AD facilities

would have substantial benefits in regards to diverting organic material from landfills and reducing greenhouse gas emissions in comparison to existing practices. Alternative C involves the construction of an entirely new facility, which would result in potentially more environmental impacts including potential impacts to land use, biological resources, cultural resources, air quality, and greenhouse gas emissions.

CHAPTER 19.0

Organizations and Persons Consulted

The following persons and organizations were consulted by letter, telephone or in person for information as part of the preparation of the DEIR. This list represents contacts made in addition to those contacted during the NOP scoping process. The responsible public agencies and interested parties consulted during the NOP scoping process are identified in Chapter 1.0, Introduction. Document preparers are identified in Chapter 20.0, EIR Preparers and Contributors.

Los Angeles County (Lead Agency)	
Department of Regional Planning	Shirley Imsand Patricia Hachiya
Department of Public Works (Environmental Programs, Building and Safety, Construction, Geotechnical and Materials Engineering, Land Development, Road Maintenance, Traffic and Lighting)	Emiko Thompson Chandra McLoud Andrew Ngumba Chris Sheppard Karlo Manalo David Nguyen Coby Skye Bahman Hajialiakbar Carlos Ruiz Pat Proano Clark Ajwani Jeff Pletyak Natalie Jimenez Jeremy Wan Brian Smith Clint Lee Jeff Payne Toan Duong Glenn Tong Sam Abdelhadi Natalie Jimenez
County Fire Department	Wally Collins Frank Vidales
Department of Public Health	Michelle Tsiebos
Department of Parks and Recreation	Julie Yom
County Fire Department, Fire Station 76	Captain B. Hernandez

Other Agencies and Organizations	
Caltrans District 7	Mumbie Fredson Cole
Valencia Water Company	Jeff Ford
Southern California Edison	George Perez Christine McLeod
Newhall Land and Farming Company	Alex Harrell

Cultural Resources, including Native American and Historical Society Consultation	
South Central Coastal Information Center	Stacy St. James
Santa Clarita Valley Historical Society	Alan Pollack
Kitanemuk &Yowlumne Tejon Indians	Delia Dominguez, Chairperson
Individual	Randy Guzman-Folkes
Individual	Beverly Salazar Folkes
LA City/County Native American Indian Committee	Ron Andrade, Director
Fernandeño Tataviam Band of Mission Indians	Rudy Ortega Jr., Tribal Administrator
Fernandeño Tataviam Band of Mission Indians	Ronnie Salas, Cultural Preservation Department
San Fernando Band of Mission Indians	John Valenzuela, Chairperson
Native American Heritage Commission	Dave Singleton

CHAPTER 20.0

EIR Preparers and Contributors

20.1 Los Angeles County Department of Regional Planning

Richard J. Bruckner: Director

Paul McCarthy: Supervising Regional Planner

Iris Chi: Planner

20.2 Consultants

20.2.1 CH2M HILL

Elyse Engel: Air Quality

John Frohning: Air Quality

Doug Huxley: Air Quality

Carrie McDougall: Air Quality

Michelle Neumann: Air Quality

Elizabeth Schwing: Air Quality

Andrea White: Air Quality

Gloriella Cardenas: Archaeological and Paleontological Resources

Clint Helton: Archaeological and Paleontological Resources

Natalie Lawson: Archaeological and Paleontological Resources

Ava Edens: Biological Resources

Melissa Fowler: Biological Resources

James Gorham: Biological Resources

Cindy Salazar: Environmental Justice and Socioeconomics

Elizabeth Bryant: Geology and Hydrogeology, Surface Water Drainage, Water Quality

Mark Wuttig: Geology and Hydrogeology, Surface Water Drainage, Water Quality

Joshua Mooneyham: Landfill Permits

Matt Gordon: Land Use, Public Services and Utilities, Environmental Justice and Socioeconomics

Mark Bastasch: Noise

Jim Roldan: Traffic and Transportation

Loren Bloomberg: Traffic and Transportation

Sajeev Keecheril: Traffic and Transportation

Jose Herrera: Traffic and Transportation

Tom Priestley: Visual Resources

Colleen Bredensteiner: Visual Resources

Kevin Grant: Visual Resources, Cumulative Impacts

Michael Stephan: Visualization Specialist

Lisa Valdez: EIR Coordinator, Cumulative Impacts, Traffic and Transportation

Jim Hunter: CEQA Reviewer

Brenda Eells: Senior Technical Consultant, CEQA Reviewer, Project Manager

Dawn Durand: Senior Document Publisher

Laura Eckert: Technical Editor

Heather Rand: Technical Editor

Andy Vollmar: Graphic Designer

20.2.2 Golder Associates Inc.

Rich Haughey: Solid Waste Practice Leader

20.2.3 RT Frankian & Associates

Ted Clark: Hydrogeologist

Alan Resplicka: Geotechnical Engineer

Tim Latiolait: Engineering Geologist

20.2.4 STANTEC

Daryl Zerfass: Traffic Modeler

20.2.5 SCE Engineers

Patrick Sullivan: Carbon Storage Analysis

CHAPTER 21.0

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