EIR #616

Responses to Comments

Esperanza Hills
Final Environmental Impact Report

Project No. PA120037

Prepared For:
Lead Agency
County of Orange
OC Public Works/OC Planning
300 N. Flower Street
Santa Ana, CA 92702-4048
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November 2014

Appendices

Appendix A–
Public Notice of Availability (NOA)

County of Orange
OC Planning Services
Phone: (714) 667-8856

POSTED

DEC 02 2013

HUGH NGUYEN, CLERK-RECORDER

BY: ____________ DEPUTY

PUBLIC NOTICE OF AVAILABILITY (NOA) DRAFT ENVIRONMENTAL IMPACT REPORT

SCH #: 2012121071

Date: December 2, 2013

Project: Esperanza Hills Project (the "Project") - Draft Environmental Impact Report (EIR No. 616)

Project Location: The Project site is located east of San Antonio Road and north of Stonehaven Drive/Via del Agua within unincorporated Orange County and within the City of Yorba Linda Sphere of Influence (APN #s 326-031-006, 351-031-004, 351-031-006). A Vicinity Map is included herein. The nearest cross streets are Yorba Linda Boulevard and Stonehaven/Via Del Agua. The majority of the site is vacant, with the exception of three operational oil wells, water line transmission facilities, electric transmission lines and dirt access roads.

Project Description: The Esperanza Hills Project proposes to construct 340 single-family residential units on 468.9 acres. The project will consist of a gate-guarded community with low density residential and estate lots. Project components will include 13.9 acres of active and passive parks and approximately 7 miles of trails. The trails will include pedestrian, bicycle, and equestrian trails with linkages to permit non-vehicular access to the Chino Hills State Park and the surrounding open space areas. The project will retain approximately 230.8 acres of open space, including 146.9 acres of undisturbed natural open space, and 83.9 acres of landscaping as part of a fuel modification plan. As a private community, a Homeowners' Association will be formed to manage and maintain streets, landscaping, parks, and other amenities.

Fuel modification areas have been identified, and emergency access/evacuation plans and three fire-fighting staging areas have been proposed. Two underground water reservoirs would be constructed on the site which would be capable of providing gravity flow to on-site hydrants. Proposed on- and off-site redundant water supply is designed for residential and emergency use. Water runoff and water quality treatment measures will be included in the project including the use of bio-retention basins.

Four access options were analyzed in the DEIR. Option 1 would provide a primary connection going south to Stonehaven Drive. Option 2 would provide a primary connection going west from the Project to Aspen Way, connecting to San Antonio Road. A separate emergency ingress/egress would also be provided under both Option 1 and 2. Additional access options have been provided in Project Alternatives as Option 2A and Option 2B.

The current General Plan Land Use designation for the property is Open Space (5) and the Zoning is A1 General Agriculture and A1 (O) General Agriculture/Oil Production. The proposed project would change the General Plan Land Use designation from Open Space (5) to Suburban Residential (1B) to allow for residential development. In addition to the General Plan Amendment (GPA), a Specific Plan (SP) is proposed to replace the existing A1 (General Agriculture) and A1(O) (General Agriculture/Oil Production) zoning designations to regulate and guide development of the property. A Specific Plan (SP) for Esperanza Hills will include detailed development regulations, and design guidelines and will serve as the policy and regulatory document for future development. A Vesting Tentative Tract Map (VTTM 17522) has been prepared.

NOA Purpose: The purpose of this NOA is to inform local residents, responsible agencies, institutions, and other interested parties that the Draft EIR is available for review and comment during the 60-day Public Comment Period (December 4, 2013 through February 3, 2014). Written comments regarding the Draft EIR must be submitted no later than 5:00PM on Monday, February 3, 2014 to Kevin Canning, Contract Planner, OC Public Works/OC Planning, 300 N. Flower. P.O. Box 4048, Santa Ana, California 92702-4048 or via email at: Kevin.Canning@ocpw.ocgov.com.

Significant Environmental Impacts: Based on the analysis contained in the Draft EIR, the Project will result in significant and unavoidable environmental impacts in the areas of greenhouse gas emissions and noise. All remaining potential environmental impacts are insignificant or can be mitigated to a level that is less than significant.

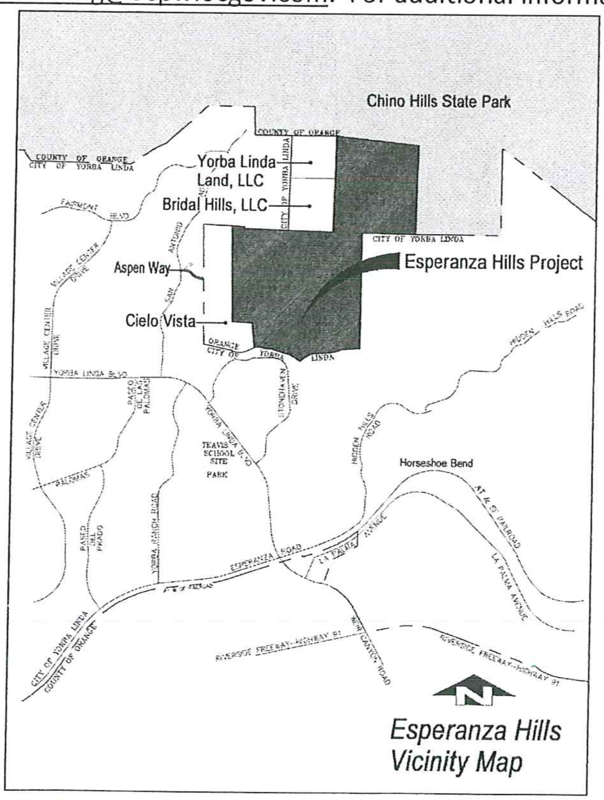
Information Repositories: The Draft EIR is available for review at the following locations:

- OC Planning Services website -
  https://cms.ocgov.com/gov/pw/cd/planning/land/projects/esperanza_hills.asp

  http://cms.ocgov.com/gov/pw/cd/planning/land/projects/esperanza_hills.asp

- OC Planning Services - 300 N. Flower Street, First Floor, Santa Ana, CA 92702;
- City of Yorba Linda - 4845 Casa Loma Avenue, Yorba Linda, CA 92885;
- Yorba Linda Public Library - 18181 Imperial Highway, Yorba Linda, CA 92886; and
- East Anaheim Library - 8201 E. Santa Ana Canyon Road, Anaheim Hills, CA 92808.

How Do I Participate? Submit written comments by February 3, 2014 to: OC Planning, Attn: Kevin Canning, 300 N. Flower St., Santa Ana, California 92702-4048, Re: Esperanza Hills Project or via email to Kevin Canning at: Kevin.Canning@ocpw.ocgov.com. For additional information, please contact Mr. Canning at: (714) 667-8847.



Esperanza Hills Vicinity Map

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BY:________________DEPUTY

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2012121071

Project Title: Esperanza Hills Draft Environmental Impact Report 616

Lead Agency: County of Orange — Contact Person: Kevin Canning
Mailing Address: 300 N. Flower Street — Phone: (714) 667-8847
City: Santa Ana — Zip: 92702 — County: Orange

Project Location: County: Orange — City/Nearest Community: Yorba Linda
Cross Streets: Yorba Linda Boulevard/Stonehaven — Zip Code: 92887
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W — Total Acres: 468.9
Assessor's Parcel No.: 326-031-006, 351-031-004 and 006 — Section: 17 & 18 — Twp.: 3S — Range: 8W — Base: ____
Within 2 Miles: State Hwy #: State Route 91 (3 mi.) — Waterways: Santa Ana River
Airports: None — Railways: AT&SF Railroad — Schools: Travis Ranch MS, Yorba Linda HS

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☒ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____
NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI
Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

Local Action Type:

☐ General Plan Update ☒ Specific Plan ☒ Rezone ☐ Annexation
☒ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other: ____

Development Type:

☒ Residential: Units 340 Acres 468.9
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☐ Other: ____

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☒ Vegetation
☐ Agricultural Land ☒ Flood Plain/Flooding ☒ Schools/Universities ☒ Water Quality
☒ Air Quality ☒ Forest Land/Fire Hazard ☐ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☒ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☒ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☒ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Land Use Designation: Open Space - Zoning Designation: General Agriculture (A1), General Agriculture/Oil Production (A1(O)

Project Description: *(please use a separate page if necessary)*

The project proposes to construct 340 single-family residential units in a gate-guarded community with low density residential and estate lots. The site is currently vacant except for three operation oil wells, water line transmission facilities, electric transmission lines and dirt access roads. Project components include 13.9 acres of active and passive parks, 7 miles of equestrian, pedestrian and bicycle trails. The Project will retain approximately 230 acres of open space including undisturbed open space and landscaping as part of a fuel modification plan. Residential, guest and emergency access will be provided via one of four access options. Water, sewer and drainage infrastructure will be built on the site and include two underground water reservoirs providing resident and fire-fighting water supply.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

S	Air Resources Board		Office of Historic Preservation
	Boating & Waterways, Department of		Office of Public School Construction
	California Emergency Management Agency	S	Parks & Recreation, Department of
	California Highway Patrol		Pesticide Regulation, Department of
S	Caltrans District # 12		Public Utilities Commission
	Caltrans Division of Aeronautics	S	Regional WQCB # SA
	Caltrans Planning		Resources Agency
	Central Valley Flood Protection Board		Resources Recycling and Recovery, Department of
	Coachella Valley Mtns. Conservancy		S.F. Bay Conservation & Development Comm.
	Coastal Commission		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
	Colorado River Board		San Joaquin River Conservancy
S	Conservation, Department of		Santa Monica Mtns. Conservancy
	Corrections, Department of		State Lands Commission
	Delta Protection Commission		SWRCB: Clean Water Grants
	Education, Department of	S	SWRCB: Water Quality
	Energy Commission		SWRCB: Water Rights
S	Fish & Game Region # SD		Tahoe Regional Planning Agency
	Food & Agriculture, Department of	S	Toxic Substances Control, Department of
	Forestry and Fire Protection, Department of		Water Resources, Department of
	General Services, Department of		
	Health Services, Department of		Other:
	Housing & Community Development		Other:
S	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date December 4, 2013 Ending Date February 3, 2014

Lead Agency (Complete if applicable):

Consulting Firm: CAA Planning, Inc.
Address: 65 Enterprise, Suite 130
City/State/Zip: Aliso Viejo, CA 92656
Contact: Shawna L. Schaffner
Phone: (949) 581-2888

Applicant: Doug Wymore/Gary Lamb
Address: 7114 E. Stetson Drive, Suite 350
City/State/Zip: Scottsdale, AZ 85251
Phone: (602) 738-8181

Signature of Lead Agency Representative: Kim Canning **Date:** 12/2/13

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

Appendix B – Air Quality and Greenhouse Gas Emissions Impact Analysis Prepared by Giroux & Associates dated April 14, 2014

AIR QUALITY and GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

ESPERANZA HILLS-YORBA LINDA ESTATES

ORANGE COUNTY, CALIFORNIA

Prepared for:

Yorba Linda Estates, LLC
Attn: Douglas Wymore
7114 East Stetson Drive, Suite 350
Scottsdale, AZ 85251

Date:

April 14, 2014

Project No.: P14-013 A

CLIMATE AND METEOROLOGY

Yorba Linda's climate, as with all of Southern California, is largely dominated by the strength and position of the semi-permanent high-pressure center over the Pacific Ocean near Hawaii. It creates cool summers, mild winters, infrequent rainfall, it drives the refreshing daytime sea breeze, and it maintains comfortable humidity's and ample sunshine. Unfortunately, the same atmospheric processes that create the desirable living climate combine to severely restrict the ability of the atmosphere to disperse the air pollution generated mainly by the large population attracted by the climate. Portions of the Los Angeles Basin, including northern Orange County, therefore, experience some of the worst air quality in the nation for certain pollution species.

Regional air quality is controlled by the location and strength of pollutant sources and by the winds and inversions that control the horizontal and vertical regional dispersion patterns. Winds near the project site, as monitored at the nearest South Coast Air Quality Management District (SCAQMD) measurement station in Anaheim, display several characteristic regimes. During the day, especially in summer, winds are from the west and southwest at 7-9 miles per hour. At night, especially in winter, the land becomes cooler than the ocean and an offshore wind of 3-5 miles per hour develops. One other important wind regime occurs when a high-pressure center forms over the western United States and creates strong offshore winds. These winds are warmed and dried by air compression as they descend from the upper desert regions into the basin. These winds are accelerated through local canyons and create hot, dry, gusty Santa Ana's from the east and northeast across northern Orange and southern Los Angeles Counties.

The low frequency of calms and adequate daytime ventilation speed typically do not allow for any daytime stagnation of air pollutants in the Yorba Linda area. The moderate onshore breeze carries any locally generated emissions eastward toward the Chino Hills or across northern Orange County and then up Santa Ana or Carbon Canyons toward receptors in western San Bernardino and Riverside Counties. Any daytime air quality problems occur mainly when winds shift more into the northwest and the daytime clean sea breeze is replaced by airflow across substantial pollution generation areas of southwestern Los Angeles County. These winds bring occasional unhealthful smog levels across the project site during the summer and early fall. Wind at night drifting seaward across the air basin and off the nearby hills is much slower and does allow for localized stagnation of pollution, but the density of vehicular sources in the upwind area is generally low enough to minimize any major air pollution problems. Any air pollution episodes, if they occur, are, therefore, due mainly to pollutants transported into the area rather than any locally generated emissions.

In addition to winds that govern the horizontal rate and trajectory of any air pollutants, Southern California experiences several characteristic temperature inversions that control the vertical depth through which pollutants can be mixed. The daytime onshore flow of marine air is capped by a massive dome of warm air that acts like a giant lid over the basin. As the clean ocean air moves inland, pollutants are continually added from below without any dilution from above. As this layer slows down in inland valleys of the basin and undergoes photochemical transformations under abundant sunlight, it creates very unhealthful levels of smog (mainly ozone).

A second inversion forms at night as cool air pools in low elevations while the air aloft remains warm. Shallow radiation inversions are formed (especially in winter) that trap pollutants near intensive traffic sources such as freeways, shopping centers, etc., and form localized violations of clean air standards called "hot spots." If any noticeable, direct air pollution effects were to occur from changes in the vehicular distribution around the proposed roadway improvement project area, it would be from automotive exhaust trapped by these nocturnal radiation inversions.

AIR QUALITY SETTING

AMBIENT AIR QUALITY STANDARDS (AAQS)

In order to gauge the significance of the air quality impacts of the proposed Esperanza Hills project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise, called "sensitive receptors." Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research has shown, however, that chronic exposure to ozone (the primary ingredient in photochemical smog) may lead to adverse respiratory health even at concentrations close to the ambient standard.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. The initial attainment deadline of 1977 was extended several times in air quality problem areas like Southern California. In 2003, the Environmental Protection Agency (EPA) adopted a rule, which extended and established a new attainment deadline for ozone for the year 2021. Because the State of California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in Table 1. Sources and health effects of various pollutants are shown in Table 2.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the U.S. Environmental Protection Agency (EPA) review all national AAQS in light of currently known health effects. EPA was charged with modifying existing standards or promulgating new ones where appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter (called "PM-2.5"). New national AAQS were adopted in 1997 for these pollutants.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were challenged by trucking and manufacturing organizations. In a unanimous decision, the U.S. Supreme Court ruled that EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their required attainment schedules. Such attainment-planning schedule inconsistencies centered mainly on the 8-hour ozone standard. EPA subsequently agreed to downgrade the attainment designation for a large number of communities to “non-attainment” for the 8-hour ozone standard.

Table 1

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 μg/m^3)		0.075 ppm (147 μg/m^3)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	12.0 μg/m^3	15 μg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 μg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 μg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)		0.053 ppm (100 μg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 μg/m^3)	Ultraviolet Fluorescence	75 ppb (196 μg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 μg/m^3)	
	24 Hour	0.04 ppm (105 μg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[11,12]	30 Day Average	1.5 μg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 μg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 μg/m^3		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 μg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (6/4/13)

Table 1 (continued)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

9. 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 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

10. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

11. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

12. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

13. In 1989, the ARB 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.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (6/4/13)**

Table 2
Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM-10)	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardio respiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter (PM-2.5)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also, formed from photochemical reactions of other pollutants, including NOx, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California Air Resources Board (ARB) to recommend adoption of the statewide PM-2.5 standard that is more stringent than the federal standard. This standard was adopted in 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard, but only requires continued progress towards attainment.

Similarly, the ARB extensively evaluated health effects of ozone exposure. A new state standard for an 8-hour ozone exposure was adopted in 2005, which aligned with the exposure period for the federal 8-hour standard. The California 8-hour ozone standard of 0.07 ppm is more stringent than the federal 8-hour standard of 0.075 ppm. The state standard, however, does not have a specific attainment deadline. California air quality jurisdictions are required to make steady progress towards attaining state standards, but there are no hard deadlines or any consequences of non-attainment. During the same re-evaluation process, the ARB adopted an annual state standard for nitrogen dioxide ($NO_{2)}$ that is more stringent than the corresponding federal standard, and strengthened the state one-hour NO_2 standard.

As part of EPA's 2002 consent decree on clean air standards, a further review of airborne particulate matter (PM) and human health was initiated. A substantial modification of federal clean air standards for PM was promulgated in 2006. Standards for PM-2.5 were strengthened, a new class of PM in the 2.5 to 10 micron size was created, some PM-10 standards were revoked, and a distinction between rural and urban air quality was adopted. In December, 2012, the federal annual standard for PM-2.5 was reduced from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ which matches the California AAQS. The severity of the basin's non-attainment status for PM-2.5 may be increased by this action and thus require accelerated planning for future PM-2.5 attainment.

In response to continuing evidence that ozone exposure at levels just meeting federal clean air standards is demonstrably unhealthful, EPA had proposed a further strengthening of the 8-hour standard. Draft standards were published. The anticipated future 8-hour standard was 0.065 ppm. Environmental organizations generally praised this proposal. Most manufacturing, transportation or power generation groups opposed the new standard as economically unwise in an uncertain fiscal climate. In recognition of the fact that a stronger ozone standard could adversely impact employment, that proposal has been placed on indefinite hold.

A new federal one-hour standard for nitrogen dioxide (NO_2) has also recently been adopted. This standard is more stringent than the existing state standard. Based upon air quality monitoring data in the South Coast Air Basin, the California Air Resources Board has requested the EPA to designate the basin as being in attainment for this standard. The federal standard for sulfur dioxide (SO_2) was also recently revised. However, with minimal combustion of coal and mandatory use of low sulfur fuels in California, SO_2 is typically not a problem pollutant.

BASELINE AIR QUALITY

Existing and probable future levels of air quality around the project area can best be best inferred from ambient air quality measurements conducted by the SCAQMD at the Anaheim monitoring station. This station measures both regional pollution levels such as smog, as well as primary vehicular pollution levels near busy roadways such as carbon monoxide and nitrogen oxides. Pollutants such as particulates (PM-10 and PM-2.5) are also monitored at Anaheim. Table 3 is a 6-year summary of monitoring data for the major air pollutants compiled from this air monitoring station. From these data the following conclusions regarding air quality trends can be drawn:

a. Photochemical smog (ozone) levels occasionally exceed standards. The 1-hour state standard and the 8-hour state and federal ozone standard have been exceeded an average of 1 percent of all days in the past six years. Years 2010, 2011 and 2012 demonstrate progressively improved ozone levels in the area. While ozone levels are still high, they are much lower than 10 to 20 years ago.

b. Respirable dust (PM-10) levels occasionally exceed the state standard on approximately three percent of measured days. As with ozone, the frequency of violations has noticeably decreased in recent years. The less stringent federal PM-10 standard was violated once in 2007 during a wildfire event.

c. The federal ultra-fine particulate (PM-2.5) standard of 35 $\mu g/m^3$ has been exceeded less than two percent of measurement days in the last six years. Year 2010 has been the "cleanest" year on records.

d. More localized pollutants such as carbon monoxide, nitrogen oxides, etc. are very low near the project site. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NOx or CO without any threat of violating applicable AAQS.

Although complete attainment of every clean air standard is not yet imminent, extrapolation of the steady improvement trend suggests that such attainment could occur within the reasonably near future.

Table 3

Air Quality Monitoring Summary (2007-2012)
(Number of Days Standards Were Exceeded, and
Maximum Levels During Such Violations)
(Entries shown as ratios = samples exceeding standard/samples taken)

Pollutant/Standard	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Ozone						
1-Hour > 0.09 ppm (S)	2	2	0	1	0	0
8-Hour > 0.07 ppm (S)	7	10	2	1	1	0
8- Hour > 0.075 ppm (F)	1	5	1	1	0	0
Max. 1-Hour Conc. (ppm)	0.127	0.105	0.093	0.104	0.088	0.079
Max. 8-Hour Conc. (ppm)	0.100	0.086	0.077	0.088	0.072	0.067
Carbon Monoxide						
1-hour > 20. ppm (S)	0	0	0	0	0	0
8- Hour > 9. ppm (S,F)	0	0	0	0	0	0
Max 1-hour Conc. (ppm)	3.6	4.1	3.2	2.7	2.7	-
Max 8-hour Conc. (ppm)	2.9	3.4	2.7	2.0	2.1	2.3
Nitrogen Dioxide						
1-Hour > 0.18 ppm (S)	0	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.086	0.093	0.068	0.073	0.074	0.067
Inhalable Particulates (PM-10)						
24-hour > 50 $\mu g/m^3$ (S)	6/59	3/58	1/56	0/57	2/60	0/61
24-hour > 150 $\mu g/m^3$ (F)	1/59	0/58	0/56	0/57	0/60	0/61
Max. 24-Hr. Conc. ($\mu g/m^3$)	488.*	61.	62.	43.	53.	48.
Ultra-Fine Particulates (PM-2.5)						
24-Hour > 35 $\mu g/m^3$ (F)	14/336	5/304	5/362	0/363	2/365	4/347
Max. 24-Hr. Conc. ($\mu g/m^3$)	79.4	67.8	64.5	31.7	39.2	50.1

*wild fire event

Source: South Coast AQMD Air Monitoring Station Data Summary, Anaheim Station (3176)

AIR QUALITY PLANNING

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards. The SCAB could not meet the deadlines for ozone, nitrogen dioxide, carbon monoxide, or PM-10. In the SCAB, the agencies designated by the governor to develop regional air quality plans are the SCAQMD and the Southern California Association of Governments (SCAG). The two agencies first adopted an Air Quality Management Plan (AQMP) in 1979 and revised it several times as earlier attainment forecasts were shown to be overly optimistic.

The 1990 Federal Clean Air Act Amendment (CAAA) required that all states with air-sheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). Amendments to the SIP have been proposed, revised and approved over the past decade. The most current regional attainment emissions forecast for ozone precursors (ROG and NOx) and for carbon monoxide (CO) and for particulate matter are shown in Table 4. Substantial reductions in emissions of ROG, NOx and CO are forecast to continue throughout the next several decades. Unless new particulate control programs are implemented, PM-10 and PM-2.5 are forecast to slightly increase.

The Air Quality Management District (AQMD) adopted an updated clean air "blueprint" in August 2003. The 2003 Air Quality Management Plan (AQMP) was approved by the EPA in 2004. The AQMP outlined the air pollution measures needed to meet federal health-based standards for ozone by 2010 and for particulates (PM-10) by 2006. The 2003 AQMP was based upon the federal one-hour ozone standard which was revoked late in 2005 and replaced by an 8-hour federal standard. Because of the revocation of the hourly standard, a new air quality planning cycle was initiated.

With re-designation of the air basin as non-attainment for the 8-hour ozone standard, a new attainment plan was developed. This plan shifted most of the one-hour ozone standard attainment strategies to the 8-hour standard. As previously noted, the attainment date was to "slip" from 2010 to 2021. The updated attainment plan also includes strategies for ultimately meeting the federal PM-2.5 standard.

Because projected attainment by 2021 requires control technologies that do not exist yet, the SCAQMD requested a voluntary "bump-up" from a "severe non-attainment" area to an "extreme non-attainment" designation for ozone. The extreme designation will allow a longer time period for these technologies to develop. If attainment cannot be demonstrated within the specified deadline without relying on "black-box" measures, EPA would have been required to impose sanctions on the region had the bump-up request not been approved. In April 2010, the EPA approved the change in the non-attainment designation from "severe-17" to "extreme." This reclassification sets a later attainment deadline (2024), but also requires the air basin to adopt even more stringent emissions controls.

Table 4

South Coast Air Basin Emissions Forecasts (Emissions in tons/day)

Pollutant	2008[a]	2010[b]	2015[b]	2020[b]
NOx	917	836	667	561
ROG	632	596	545	525
CO	3,344	3,039	2,556	2,281
PM-10	308	314	328	340
PM-2.5	110	110	111	113

[a]2008 Base Year.
[b]With current emissions reduction programs and adopted growth forecasts.
Source: California Air Resources Board, California Emissions Projection Analysis Model, 2009

In previous attainment plan reviews, EPA disapproved part of the SCAB PM-2.5 attainment plan included in the AQMP. EPA stated that the current attainment plan relies on PM-2.5 control regulations that have not yet been approved or implemented. It is expected that a number of rules that are pending approval will remove the identified issues. The recently adopted 2012 AQMP being readied for ARB submittal to EPA as part of the California State Implementation Plan (SIP) is expected to remedy these deficiencies.

The federal Clean Air Act requires that non-attainment air basins have EPA approved attainment plans in place. This requirement includes the federal one-hour ozone standard even though that standard was revoked around eight years ago. There was no approved attainment plan for the one-hour federal standard at the time of revocation. Through a legal quirk, the SCAQMD is now forced to develop an AQMP for the long since revoked one-hour federal ozone standard. However, because attainment strategies for the federal one-and eight-hour ozone standards are essentially identical, the 2012 AQMP for ozone is anticipated to be an appropriate plan for both standards.

Projects such as the proposed Esperanza Hills project do not directly relate to the AQMP in that there are no specific air quality programs or regulations governing general development. Conformity with adopted plans, forecasts and programs relative to population, housing, employment and land use is the primary yardstick by which impact significance of planned growth is determined.

The 2012 AQMP has assumed that development associated with general plans, specific plans, residential projects, and wastewater facilities will be constructed in accordance with population growth projections identified by SCAG in its 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2012 AQMP has assumed that such development projects will implement strategies to reduce emissions generated during the construction and operational phases of development.

Criteria for determining consistency with the AQMP are defined in the SCAQMD CEQA Air Quality Handbook (1993) as follows:

Consistency Criterion No 1: The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

> The project would be consistent with the AQMP if it would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards.
>
> As shown later in this report, the proposed project could potentially violate an air quality standard or contribute to an air quality violation during Phase I grading. However, implementation of the mitigation measures would reduce associated impacts to less-than-significant

Consistency Criterion No 2: The proposed project will not exceed the assumptions in the AQMP or increments based on the years of project build-out phase.

> A project would conflict with the AQMP if it will exceed the assumptions in the AQMP or increments based on the year of project build-out. The Handbook indicates that key assumptions to use in this analysis are population and housing growth projections used in the Regional Transportation Model run by the Southern California Association of Governments. For unincorporated Orange County the model predicts that between years 2008 and 2020 the number of households will increase from 38,500 to 44,000. This project adds 378 housing units, which account for less than 7% of the total projected growth. The proposed development is consistent with regional growth projections.

Therefore, the proposed project would not conflict with or obstruct implementation of the air quality plan established for the region such that impacts would be less-than-significant.

AIR QUALITY IMPACT

STANDARDS OF SIGNIFICANCE

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they "substantially" contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of the California CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

a. Conflicts with or obstructs implementation of the applicable air quality plan.

b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.

c. Results in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

d. Exposes sensitive receptors to substantial pollutant concentrations.

e. Creates objectionable odors affecting a substantial number of people.

Primary Pollutants

Air quality impacts generally occur on two scales of motion. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, levels of those pollutants that are emitted in their already unhealthful form will be highest. Carbon monoxide (CO) is an example of such a pollutant. Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact. Many particulates, especially fugitive dust emissions, are also primary pollutants. Because of the non-attainment status of the South Coast Air Basin (SCAB) for PM-10, an aggressive dust control program is required to control fugitive dust during project construction.

Secondary Pollutants

Many pollutants, however, require time to transform from a more benign form to a more unhealthful contaminant. Their impact occurs regionally far from the source. Their incremental regional impact is minute on an individual basis and cannot be quantified except through complex photochemical computer models. Analysis of significance of such emissions is based upon a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

Because of the chemical complexity of primary versus secondary pollutants, the SCAQMD has designated significant emissions levels as surrogates for evaluating regional air quality impact significance independent of chemical transformation processes. Projects with daily emissions that exceed any of the following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

Daily Emissions Thresholds

Pollutant	Construction	Operations
ROG	75	55
NOx	100	55
CO	550	550
PM-10	150	150
PM-2.5	55	55
SOx	150	150
Lead	3	3

Source: SCAQMD CEQA Air Quality Handbook, November, 1993 Rev.

Additional Indicators

In its CEQA Handbook, the SCAQMD also states that additional indicators should be used as screening criteria to determine the need for further analysis with respect to air quality. The additional indicators are as follows:

- Project could interfere with the attainment of the federal or state ambient air quality standards by either violating or contributing to an existing or projected air quality violation

- Project could result in population increases within the regional statistical area which would be in excess of that projected in the AQMP and in other than planned locations for the project's build-out year.

- Project could generate vehicle trips that cause a CO hot spot.

The SCAQMD CEQA Handbook also identifies various secondary significance criteria related to toxic, hazardous or odorous air contaminants. Except for the small diameter particulate matter ("PM-2.5") fraction of diesel exhaust generated by heavy construction equipment, there are no secondary impact indicators associated with project construction and subsequent occupancy. For PM-2.5 exhaust emissions, recently adopted policies require the gradual conversion of on-road delivery fleets and off-road heavy equipment to low NOx and low PM-2.5 emissions or the use of “clean” diesel if their emissions are demonstrated to be as low as those required by “Tier 4” standards. Because health risks from toxic air contaminants (TAC’s) are cumulative over an assumed 70-year lifespan, measurable off-site public health risk from diesel TAC exposure would occur for only a brief construction portion of a project lifetime, and only in dilute quantity.

SENSITIVE RECEPTORS

Air quality impacts are analyzed relative to those persons with the greatest sensitivity to air pollution exposure. Such persons are called “sensitive receptors.” Sensitive population groups include young children, the elderly and the acutely and chronically ill (especially those with cardio-respiratory disease).

Residential areas are considered to be sensitive to air pollution exposure because they may be occupied for extended periods, and residents may be outdoors when exposure is highest. Schools are similarly considered to be sensitive receptors.

Several development options are being considered for this project, each with a different primary main access roadway. Proximity to access/egress roadways for each project option is shown below:

Option	**Access Roadway**	**Distance to Closest Home**
Option 1	Stonehaven Way	50 feet to receiver
Option 2	Aspen Way @ San Antonio	50 feet to receiver
Option 2A	San Antonio (1,850 feet S of Aspen)	250 feet to receiver

CONSTRUCTION ACTIVITY IMPACTS

Dust is typically the primary concern during construction of new homes and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day. Any assignment of specific parameters to an unknown future date is speculative and conjectural.

Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into midrange average values. This assumption may or may not be totally applicable to site-specific conditions on the proposed project site. As noted previously, emissions estimation for project-specific fugitive dust sources is therefore characterized by a considerable degree of imprecision.

Average daily PM-10 emissions during site grading and other disturbance average about 10 pounds per acre. This estimate presumes the use of reasonably available control measures (RACMs). The SCAQMD requires the use of best available control measures (BACMs) for fugitive dust from construction activities. With the use of BACMs, fugitive dust emissions can be reduced to 1-2 pounds per day per acre disturbed.

Current research in particulate-exposure health suggests that the most adverse effects derive from ultra-small diameter particulate matter comprised of chemically reactive pollutants such as sulfates, nitrates or organic material. A national clean air standard for particulate matter of 2.5 microns or smaller in diameter (called "PM-2.5") was adopted in 1997. A limited amount of construction activity particulate matter is in the PM-2.5 range. PM-2.5 emissions are estimated to comprise 10-20 percent of PM-10.

In addition to fine particles that remain suspended in the atmosphere semi-indefinitely, construction activities generate many larger particles with shorter atmospheric residence times. This dust is comprised mainly of large diameter inert silicates that are chemically non-reactive and are further readily filtered out by human breathing passages. These fugitive dust particles are therefore more of a potential soiling nuisance as they settle out on parked cars, outdoor furniture or landscape foliage rather than any adverse health hazard. The deposition distance of most soiling nuisance particulates is less than 100 feet from the source (EPA, 1995) under normal wind conditions. Most adjacent sensitive receptors are further than 100 feet from the Esperanza Hills project construction site perimeter. Existing uses closer than 100 feet will only have construction activities in close proximity for a short period of time.

Exhaust emissions will result from on and off-site heavy equipment. The types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Initial clearing and grading activities will shift towards construction and paving, etc. Each of the three development option requires a varying amount of grading. No earthworks are anticipated to require on-road haul, rather transported or borrowed from an adjacent undeveloped sites. The volume of earthworks anticipated by each option is shown below. The center of each borrow site in relationship to the center of the proposed project development is also indicated below. The grading quantities and haul distance indicated below were modeled to determine all construction emissions associated with project grading.

Option	Borrow	Distance to Borrow Site
1	286,700 CY	1,000 feet
2	730 CY	1,700 feet
2A	57,000 CY	2,400 feet

The project build-out schedule could depend on market demand; however, for this analysis it was assumed that the project would be developed at one time and in two phases. Phase 1 would grade the entire site and construct 218 homes along the bottom portion of the ridge. Phase 2 would construct 160 homes along the upper ridge. At a build rate of 80 homes per year, the duration of Phase 1 would be 2.7 years and approximately 2 years for Phase 2. The assumed total period of off-site disturbance was six years from early 2015 to late 2020. Durations for project construction activities were obtained from the construction manager.

Other than grading quantities, the three phases are identical in terms of construction emissions. However, because grading quantities in Option 1 are the largest, and therefore represent the worst case scenario, only Option 1 was analyzed for this study. If the emissions from Option 1 do not exceed SCAQMD construction emissions thresholds then the other development options would also meet thresholds.

The CalEEMod computer model was developed by the SCAQMD and provides a mechanism to calculate both construction emissions and operational emissions from a residential land use project. It calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions. The CalEEMod 2013.2.2 computer model was used to calculate emissions from the prototype construction equipment fleet and schedule as shown in Table 5. The equipment fleet shown is primarily CalEEMod's default fleet for a residential-use project of the indicated size, with the addition of three scrapers and a grader during grading to ensure an accurate and conservative analysis. CalEEMod defaults and modeled data details are found in the appendix of this report.

Table 5
CalEEMod Equipment Fleet Phase 1
2015-2018

Clearing/Prep (30 Days)	4 Tractor/Loader/Backhoes
	3 Dozers
Grading (175 days)	2 Excavators
	1 Dozer
	2 Graders
	5 Scrapers
	2 Tractor/Loader/Backhoes
Construction (700 days)	1 Crane
	3 Forklifts
	1 Generator Set
	3 Tractor/Loader/Backhoes
	1 Welder
Paving (15 days)	2 Pavers
	2 Paving equipment
	2 Rollers

CalEEMod Equipment Fleet Phase 2
2018-2020

Construction (500 days)	1 Crane
	3 Forklifts
	1 Generator Set
	3 Tractor/Loader/Backhoes
	1 Welder
Paving (15 days)	2 Pavers
	2 Paving equipment
	2 Rollers

Utilizing this indicated equipment fleet the following worst case daily emissions were calculated by CalEEMod. Required dust mitigation measures are provided in the mitigation section of this report. The mitigation measures applied to construction equipment for the "with mitigation" scenario include the best available construction management practices as well as the following additional measures:

❖ All project Excavators, Dozers, Graders, and Scrapers utilized for grading activities shall be equipped with:

  - Tier 3 Rated Engines (or better)

CalEEMod construction demonstrating the unmitigated and mitigated emissions are shown in Tables 6 and 7 for the assumed six year construction scenario. Phase 2 is assumed to commence immediately after the finish of Phase 1.

Without the use of mitigation, equipment emissions could exceed their SCAQMD thresholds for NOx during project grading. However, the use of new or recently retrofitted Tier 3 diesel equipment could reduce daily NOx emissions to less than significant levels. Therefore, either an extended build-out schedule or aggressive equipment NOx control would reduce daily NOx impacts to less-than-significant levels.

Table 6
Option 1 Phase 1
Construction Activity Emissions
Maximum Daily Emissions (pounds/day)

Maximal Construction Emissions	ROG	NOx	CO	SO_2	PM-10	PM-2.5
2015						
Unmitigated	13.8	150.9	118.2	0.1	21.4	12.8
Mitigated	9.1	62.6	94.3	0.1	8.8	5.4
2016						
Unmitigated	9.7	33.4	28.8	0.0	3.4	2.4
Mitigated	8.7	33.4	28.8	0.0	3.4	2.4
2017						
Unmitigated	8.4	30.8	27.7	0.0	3.2	2.2
Mitigated	8.3	30.8	27.7	0.0	3.2	2.2
2018						
Unmitigated	7.8	27.3	26.5	0.0	2.9	1.9
Mitigated	7.8	27.3	26.5	0.0	2.9	1.9
SCAQMD Thresholds	75	100	550	150	150	55

Source: CalEEMod.2013.2.2 output in appendix, includes on-road materials delivery as well as construction crew commuting

Table 7
Option 1 Phase 2
Construction Activity Emissions
Maximum Daily Emissions (pounds/day)

Maximal Construction Emissions	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**
2018						
Unmitigated	7.8	26.7	24.1	0.0	2.6	1.8
Mitigated	7.8	26.7	24.1	0.0	2.6	1.8
2019						
Unmitigated	7.4	24.2	23.4	0.0	2.3	1.6
Mitigated	7.4	24.2	23.4	0.0	2.3	1.6
2020						
Unmitigated	1.4	13.8	14.9	0.0	1.0	0.7
Mitigated	1.4	13.8	14.9	0.0	1.0	0.7
SCAQMD Thresholds	75	100	550	150	150	55

LOCALIZED SIGNIFICANCE THRESHOLDS

The SCAQMD has developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Localized Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For the proposed project, the primary source of possible LST impact would be during construction. LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM-10 and PM-2.5). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

The SCAQMD has issued guidance on applying CalEEMod to LSTs. LST pollutant concentration data is currently published for 1, 2 and 5 acre sites for varying distances. Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, the following tables should be used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Maximum Daily Disturbed Acreage

Equipment Type	Acres/8-hr-day
Tractor	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

Based on this table, the proposed will result in a maximum of 6.5 acres disturbed during peak construction grading activity (1 dozer x 0.5 + 2 graders x 0.5 + 5 Scrapers x 1 = 6.5 acres disturbed).

The SCAQMD has developed LST screening tables for construction disturbance of five acres and less. However, these tables can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required. If emissions exceed the LST screening value for a five-acre site, then dispersion modeling needs to be conducted. Use of a five-acre site model for the project site for construction activities would result in more stringent LSTs because emissions would occur in a more concentrated area and closer to the nearest sensitive receptors than in reality.

LST screening tables are available for 25, 50, 100, 200 and 500 meter source-receptor distances. The nearest residential use is approximately 600 feet (200 meters) from the closest Esperanza Hills lot. Per LST guidance, only on-site construction activity is considered in the LST analysis. On-site construction emissions are provided in the CalEEMod output files and do not include sources such as on-road haul, worker commuting or vendor delivery emissions. Therefore, the following thresholds and emissions in Table 8 are determined (pounds per day).

Table 8
LST and Project Emissions

	CO	NOx	PM-10	PM-2.5
LST Thresholds North Orange County* 5 acres, 200 meters	3,605	249	78	34
Max On-Site Emissions				
Option 1 Phase 1				
Unmitigated	118	151	21	13
Mitigated	94	63	9	5
Option 1 Phase 2				
Unmitigated	24	27	3	2
Mitigated	24	27	3	2

*Source Receptor Area 16
CalEEMod Output in Appendix (maximum mitigated emissions from on-site construction)

LSTs for the North Orange County source receptor area were compared to the maximum daily construction activities. As seen in Table 8, emissions are below the LST for construction each phase. LST impacts are less-than-significant. Because LST thresholds would not be exceeded for the more conservative concentrated 5-acre disturbance assumption, they would also not be exceeded if the same emissions are dispersed over a larger project area.

OPERATIONAL IMPACTS

The proposed residential project will generate 3,617 average daily trips (ADT). Residential uses also generate small quantities of area source emissions derived from organic compounds from cleaning products, landscape maintenance, etc. The contribution of these sources is small and incorporated into the analysis below.

Operational emissions for proposed residential were calculated using CalEEMod 2013.2.2. for a project build-out year of 2020 as shown in Table 9. Calculations assume use of gas hearths as required by SCAQMD Rule 445.

Table 9

Proposed Residential Daily Operational Impacts

	Operational Emissions (lbs/day)						
Source	**ROG**	**NOx**	**CO**	**SO_2**	**PM-10**	**PM-2.5**	**CO2**
Area	16.5	0.4	31.3	0.0	0.6	0.6	7,305.3
Energy	0.3	2.7	1.2	0.0	0.2	0.2	3,540.5
Mobile	10.0	23.0	114.3	0.4	27.8	7.7	29,404.4
Total	**26.8**	**26.1**	**146.8**	**0.4**	**28.7**	**8.5**	**40,250.2**
SCAQMD Threshold	55	55	550	150	150	55	-
Exceeds Threshold?	No	No	No	No	No	No	NA

Source: CalEEMod Output in Appendix

Project development will not cause the SCAQMD's recommended threshold levels to be exceeded. Operational emissions will be at a less-than-significant level.

MICROSCALE IMPACT ANALYSIS

There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found in areas directly adjacent to congested roadway intersections. These areas of vehicle congestion have the potential to create pockets of elevated levels of CO which are called "hot spots ".

Micro-scale air quality impacts have traditionally been analyzed in environmental documents when the air basin was a non-attainment area for carbon monoxide (CO). However, the SCAQMD has demonstrated in the CO attainment redesignation request to EPA that there are no "hot spots", i.e., locations where emission concentrations expose individuals to elevated risks of adverse health effects, anywhere in SCAB.

To verify this conclusion, a CO screening analysis was performed at all intersections within the project area for which the project traffic report provided data. One-hour CO concentrations were calculated on the sidewalks adjacent to these intersections. The significance of localized project impacts depends on whether the project would cause substantial concentrations of CO. A project is considered to have significant impacts if project-related mobile-source emissions result in an exceedance of the California one-hour and eight-hour CO standards, which are:

- 1-hour = 20 ppm
- 8-hour = 9 ppm

Calculations were made for existing traffic and future time frames for the morning and evening peak hours for the three development scenarios. Combining future project build-out traffic with existing conditions represents a worst-case analysis. The results of the microscale impact analysis are shown in Tables 10 for the 1-hour concentration and Table 11 for the 8-hour concentration.

Table 10
Option 1 One-Hour CO Concentrations (ppm) *

Intersections	Existing No Project	Existing + Project	2020 No Project	2020 + Project	20235 No Project	2035 + Project
AM Peak Hours						
Yorba Linda Blvd/						
Las Palomas	3.4	3.5	3.2	3.2	3.0	3.0
San Antonio	3.5	3.6	3.2	3.3	3.1	3.1
Yorba Ranch	3.5	3.6	3.2	3.3	3.1	3.1
La Palma	4.0	4.1	3.7	3.7	3.4	3.5
PM Peak Hours						
Yorba Linda Blvd/						
Las Palomas	3.5	3.6	3.2	3.3	3.0	3.1
San Antonio	3.5	3.6	3.3	3.3	3.1	3.1
Yorba Ranch	3.6	3.6	3.3	3.3	3.1	3.2
La Palma	4.3	4.4	3.8	3.9	3.7	3.7

*including 2.7 ppm background concentration

Option 2 One-Hour CO Concentrations (ppm) *

Intersections	Existing No Project	Existing + Project	2020 No Project	2020 + Project	20235 No Project	2035 + Project
AM Peak Hours						
Yorba Linda Blvd/						
Las Palomas	3.4	3.5	3.2	3.2	3.0	3.0
San Antonio	3.5	3.6	3.2	3.3	3.1	3.1
Yorba Ranch	3.5	3.5	3.2	3.3	3.1	3.1
La Palma	4.0	4.1	3.7	3.7	3.4	3.5
PM Peak Hours						
Yorba Linda Blvd/						

Las Palomas	3.5	3.6	3.2	3.3	3.0	3.1
San Antonio	3.5	3.7	3.3	3.3	3.1	3.1
Yorba Ranch	3.6	3.6	3.3	3.3	3.1	3.1
La Palma	4.3	4.4	3.8	3.8	3.7	3.7

*including 2.7 ppm background concentration

Option 2A One-Hour CO Concentrations (ppm) *

Intersections	Existing No Project	Existing + Project	2020 No Project	2020 + Project	20235 No Project	2035 + Project
AM Peak Hours						
Yorba Linda Blvd/						
Las Palomas	3.5	3.2	3.2	3.5	3.0	3.0
San Antonio	3.6	3.3	3.3	3.6	3.1	3.1
Yorba Ranch	3.6	3.3	3.3	3.6	3.1	3.1
La Palma	4.1	3.7	3.7	4.1	3.4	3.5
PM Peak Hours						
Yorba Linda Blvd/						
Las Palomas	3.6	3.6	3.5	3.3	3.0	3.1
San Antonio	3.7	3.7	3.5	3.3	3.1	3.1
Yorba Ranch	3.6	3.6	3.6	3.3	3.1	3.1
La Palma	4.4	4.4	4.3	3.8	3.7	3.7

*including 2.7 ppm background concentration

Table 11

Option 1 8-Hour CO Concentrations (ppm) *

Intersections	Existing No Project	Existing + Project	2020 No Project	2020 + Project	20235 No Project	2035 + Project
Yorba Linda Blvd/						
Las Palomas	2.6	2.6	2.4	2.4	2.3	2.3
San Antonio	2.6	2.6	2.4	2.5	2.3	2.3
Yorba Ranch	2.6	2.6	2.4	2.5	2.3	2.4
La Palma	3.0	3.0	2.7	2.8	2.6	2.6

*including 2.1 ppm background concentration

Option 2 8-Hour CO Concentrations (ppm) *

Intersections	Existing No Project	Existing + Project	2020 No Project	2020 + Project	20235 No Project	2035 + Project
Yorba Linda Blvd/						
Las Palomas	2.6	2.6	2.4	2.4	2.3	2.3
San Antonio	2.7	2.7	2.4	2.5	2.3	2.3
Yorba Ranch	2.6	2.6	2.4	2.5	2.3	2.3
La Palma	3.0	3.0	2.7	2.7	2.6	2.6

*including 2.1 ppm background concentration

Option 2A 8-Hour CO Concentrations (ppm) *

Intersections	Existing No Project	Existing + Project	2020 No Project	2020 + Project	20235 No Project	2035 + Project
Yorba Linda Blvd/						
Las Palomas	2.6	2.6	2.4	2.4	2.3	2.3
San Antonio	2.7	2.7	2.4	2.5	2.3	2.3
Yorba Ranch	2.6	2.6	2.4	2.5	2.3	2.3
La Palma	3.0	3.0	2.7	2.7	2.6	2.6

*including 2.1 ppm background concentration

The existing peak one-hour local CO background level in 2011 in the project area vicinity was 2.7 ppm. With project implementation, in the existing time frame, inclusive of the local concentration, maximum one-hour concentration is estimated to be 4.4 ppm, which is well below the one-hour standard of 20 ppm. The maximum ambient 8-hour CO concentration in 2011 was 2.1 ppm. Maximum with project 8-hour CO concentration of 3.0 ppm (inclusive of the background concentration) were compared to the 9 ppm significance threshold. Micro-scale air quality impacts are not significant.

SCREENING LEVEL CONSTRUCTION-RELATED HEALTH RISK ANALYSIS

Combustion emissions from construction equipment would be generated during project construction and could expose adjacent sensitive receptors to DPM and other TACs. The following emission thresholds are recommended by the SCAQMD to be considered significant under CEQA guidelines.

SCAQMD Significance Thresholds
Risks and Hazards Construction-Related
Significance Thresholds

Pollutant	Construction-Related Thresholds
Risks and Hazards – TACs & $PM_{2.5}$	Increased cancer risk of >10.0 in a million Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute)

DPM exhaust emissions for on-site project construction from off-road heavy equipment were calculated using the CalEEMod 2013.2.2 computer model. CalEEMod estimates construction activities to require approximately six years with downtime for weekends and holidays. CalEEMod calculates that 1.298 tons of combustion DPM will be released throughout the project site. This translates to 0.0493 lb/hour (0.0062 grams/sec) as the AERSCREEN screening dispersion model input emission rate.

The predicted maximum one-hour DPM concentration is 0.291 $\mu g/m^3$ resulting from on-site total project DPM emissions. The hourly to annual scaling factor is 0.1. AERSCREEN output thus indicates that project construction will produce a maximum annual DPM concentration of $0.0291 \mu g/m^3$.

The excess individual cancer risk factor for DPM exposure is approximately 300 in a million per 1 $\mu g/m^3$ of lifetime exposure of 70 years according to the OEHHA Technical Support Document

(TSD) for Cancer Potency Factors entitled "Methodologies for derivation, listing of available values, and adjustments to allow for early life state exposures" (May2009). More recent research has determined that young children are substantially more sensitive to DPM exposure risk. According to the OEHHA TSD, if exposure occurs in the first several years of life, an age sensitivity factor (ASF) of 10 should be applied. For toddlers though mid-teens, the ASF is 3. The DPM exposure risk from construction exhaust thus depends upon the age of the receptor population during the assumed 6 years of construction. The excess individual cancer risk is as shown on Table 12.

Age Group	**Excess Cancer Risk***
Infants	4.21 in a million
Children	2.24 in a million
Adults	0.75 in a million

*DPM (μg/m^3) * ASF * 300 x 10^{-6} /70 years

The maximum individual cancer risk would be below the 10 in a million significance threshold.

TABLE 12

CANCER RISK AND CHRONIC NON-CANCER HEALTH RISKS AT THE CLOSEST SENSITIVE RECEPTORS DUE TO DPM EXPOSURE DURING PROJECT CONSTRUCTION

	$PM_{2.5}$ Exposure, Excess Cancer Risk, and Non-Cancer Chronic Hazard Index from Project Construction Activities at Closest Receptors
Maximum One-Hour $PM_{2.5}$	0.2911 μg/m^3
Annual Average $PM_{2.5}$ (one-hour x 0.1)	0.02911 μg/m^3
Age-Weighted Excess Risk for:	
Infants (2.25 years + 3.75 years youth)	4.21 in a million
Youth (6 years)	2.24 in a million
Adults (6 years)	0.75 in a million
Cancer Risk Significance Threshold	Excess Cancer Risk >10 x 10^{-6}
Exceeds Threshold?	**No**
Chronic Non-Cancer Hazard Index	0.006
Chronic Non-Cancer Significance Threshold	Hazard Index >1.0
Exceeds Significance Threshold?	No

SOURCES: A screening-level individual cancer analysis was conducted to determine the maximum PM2.5 concentration from diesel exhaust. This concentration was combined with the DPM exposure unit risk factor to calculate the inhalation cancer risk from project-related construction activities at the closest sensitive receptor. The EPA AERSCREEN air dispersion model was used to evaluate concentrations of DPM and PM2.5 from diesel exhaust. The AERSCREEN model was developed to provide an easy to use method of obtaining pollutant concentration estimates and is a single source Gaussian plume model which provides a maximum one-hour ground-level concentration. The model output for this analysis is included in this report.

Consistent with EPA/ARB/SCAQMD guidelines, the screening level impact analysis was conducted for the maximum exposed individual (MEI) for outdoor exposure for 24 hours per day, 350 days per year, for 6 years of construction. Any other sensitive receptor exposure (schools, parks, etc,) will be less than this maximum.

OIL WELL PROXIMITY HEALTH HAZARD

Oil wells may release fugitive hydrocarbons from loose seals, spillage or other evaporative sources. The primary carcinogen associated with petroleum products is benzene. The cancer potential of benzene is reported by OEHHA to be 29 cases per million per 1 $\mu g/m^3$ lifetime exposure. It is not known if the remaining on-site oil wells will produce for the next 70 years and in what quantity of production. A very definitive cancer risk study was prepared by the USC Keck School of Medicine to assess the proximity of oil wells to students at Beverly Hills High School (2003). The findings of the study concluded:

> "A few studies have linked Hodgkin's lymphoma to areas of high traffic density or oil refineries, but these studies are ecological (not based on individual data) based on cancers in different age groups. And the authors themselves have stated that the findings are likely to be due to chance. Many more studies have been published showing no link between oil refineries or petroleum products and these types of cancers. We are continually monitoring cancer incidence in Los Angeles County and have not observed increases in these types of cancers in areas close to active oil wells."

The author of the study, Dr. Wendy Cozen, again concluded that her review of the scientific literature turned up no connection between oil-well emissions and Hodgkin's disease, non-Hodgkin's lymphoma or thyroid cancer associated with benzene exposure (Los Angeles Times, May 7, 2003). The scientific community agrees that there is no supporting evidence to suggest that oil well proximity poses an unacceptable health risk.

NATURALLY OCCURING ASBESTOS (NOA)

Any temporary surface disturbance may create dust that contains non-inert components. The most potentially significant "natural" pollutants in fugitive dust are naturally occurring asbestos (NOA) and crystalline silica (CS). NOA is a known human carcinogen. CS is a hazardous air contaminant.

The possible presence of these materials depends upon the geomorphology of the underlying rock of a given site. Asbestos occurs naturally in ultramafic rock (which includes serpentine). When this material is disturbed in connection with construction, grading, quarrying, or surface mining operations, asbestos-containing dust can be generated. Exposure to asbestos can result in health ailments such as lung cancer, mesothelioma (cancer of the linings of the lungs and abdomen), and asbestosis (scarring of lung tissues that results in constricted breathing).

California Air Resources Board (ARB) approved an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations in July 2001. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project

The California ARB keep a list of areas for which there are reported natural occurrences of asbestos (ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ms/59/asbestos_sites.pdf). The project area is not included on this list. Dust generation from excavation and grading will have negligible potential for generation of any hazardous materials. NOA emissions and associated impact potential is negligible.

CONSTRUCTION EMISSIONS MITIGATION

In the absence of any mitigation project-related air quality impacts were shown to be potentially significant during project grading due to off-road diesel equipment NOx emissions. PM-10 (fugitive dust and equipment exhaust soot) emissions are predicted to remain below the SCAQMD CEQA significance threshold. However, the anticipated long construction duration and the volume of earthworks movement requires use of best management practices for dust control.

Fugitive Dust Control (PM-10)

- Apply soil stabilizers or moisten inactive areas.
- Prepare a high wind dust control plan.
- Address previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces as needed to avoid visible dust leaving the construction site (typically 3 times/day).
- Wet down or cover all stock piles with tarps at the end of each day or as needed.
- Provide water spray during loading and unloading of earthen materials.
- Minimize in-out traffic from construction zone
- Cover all trucks hauling dirt, sand, or loose material or require all trucks to maintain at least two feet of freeboard
- Sweep streets daily if visible soil material is carried out from the construction site
- Use perimeter sandbags and wind fences for erosion control

NOx is calculated to potentially exceed SCAQMD CEQA thresholds during site grading. The use of enhanced control measures for diesel exhaust is required to maintain NOx emissions at less-than-significant levels. Combustion diesel exhaust emissions control includes:

Exhaust Emissions Control (NOx)

- Utilize well-tuned off-road construction equipment.
- During grading activities require that contractors employ Tier 3 certified heavy equipment during grading for excavators, graders and scrapers exceeding 100 HP rated power if the entire project is graded at one time for NOx emissions unless use of such mitigation is demonstrated to be technically infeasible for a given piece of equipment.
- Enforce the California Air Resource Board 5-minute idling limits for both vehicles and off-road equipment.

OPERATIONAL EMISSIONS MITIGATION

Operational emissions are not anticipated to exceed their respective SCAQMD significance thresholds.

GREENHOUSE GAS EMISSIONS

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation in some parts of the infrared spectrum. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. For purposes of planning and regulation, Section 15364.5 of the California Code of Regulations defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. GHG statues and executive orders (EO) include AB 32, SB 1368, EO S-03-05, EO S-20-06 and EO S-01-07.

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, to be achieved by 2020.
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Maximum GHG reductions are expected to derive from increased vehicle fuel efficiency, from greater use of renewable energy and from increased structural energy efficiency. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

Greenhouse Gas Emissions Significance Thresholds

In response to the requirements of SB97, the State Resources Agency developed guidelines for the treatment of GHG emissions under CEQA. These new guidelines became state laws as part of Title 14 of the California Code of Regulations in March, 2010. The CEQA Appendix G guidelines were modified to include GHG as a required analysis element. A project would have a potentially significant impact if it:

- Generates GHG emissions, directly or indirectly, that may have a significant impact on the environment, or,

- Conflicts with an applicable plan, policy or regulation adopted to reduce GHG emissions.

Section 15064.4 of the Code specifies how significance of GHG emissions is to be evaluated. The process is broken down into quantification of project-related GHG emissions, making a determination of significance, and specification of any appropriate mitigation if impacts are found to be potentially significant. At each of these steps, the new GHG guidelines afford the lead agency with substantial flexibility.

Emissions identification may be quantitative, qualitative or based on performance standards. CEQA guidelines allow the lead agency to "select the model or methodology it considers most appropriate." The most common practice for transportation/combustion GHG emissions quantification is to use a computer model such as CalEEMod, as was used in the ensuing analysis.

The significance of those emissions then must be evaluated; the selection of a threshold of significance must take into consideration what level of GHG emissions would be cumulatively considerable. The guidelines are clear that they do not support a zero net emissions threshold. If the lead agency does not have sufficient expertise in evaluating GHG impacts, it may rely on thresholds adopted by an agency with greater expertise.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons (MT) CO_2 equivalent/year. In September 2010, the Working Group released revisions which recommended a threshold of 3,500 MT CO_2e for residential projects. This 3,500 MT/year recommendation has been used as a guideline for this analysis. Some jurisdictions have adopted a numerical annual GHG emissions level as a CEQA threshold of significance. Others, such as Orange County, have taken the numerical threshold to be an indicator level that signals a requirement for incorporating reasonable and feasible enhanced "green" building practices without formal adoption of an absolute significance standard.

Construction Activity GHG Emissions

The build-out timetable for this project is estimated by CalEEMod to be 6 years. During project construction, the CalEEMod computer model predicts that the constructions activities will generate the annual CO_2(e) emissions identified in Table 12.

SCAQMD GHG emissions policy from construction activities is to amortize emissions over a 30-year lifetime. The amortized level from is also provided in Table 13. GHG impacts from construction are considered individually less-than-significant

Table 13

Construction Emissions (Metric Tons CO_2(e))

Phase 1	**Option 1**
Year 2015	1165.0
Year 2016	536.5
Year 2017	525.1
Year 2018	284.4
Phase 2	
Year 2018	469.7
Year 2019	424.0
Year 2020	15.7
Overall Total	**3420.4**
Amortized	**114.0**

*CalEEMod Output provided in appendix

Project Operational GHG Emissions

The input assumptions for operational GHG emissions calculations, and the GHG conversion from consumption to annual regional CO_2(e) emissions are summarized in the CalEEMod output files found in the appendix of this report.

The total operational and annualized construction emissions are identified in Table 14.

Table 14
Proposed Residential Operational Emissions

Consumption Source	MT CO_2(e) tons/year
Area Sources	88.7
Energy Utilization	1,356.1
Mobile Source	4,440.5
Solid Waste Generation	201.6
Water Consumption	172.2
Annualized Construction	1,14.0
Total	6,373.0

Total project GHG emissions are substantially above the proposed significance threshold of 3,500 MT. GHG emissions for the proposed project are considered potentially significant. That finding requires consideration/implementation of reasonably available control measures.

The second GHG emissions significance evaluation relates to consistency with GHG plans and policies. Consistency with GHG plans and policies is typically evaluated relative to AB-32 requirements. AB-32 has a goal of a 28.9 percent reduction in statewide GHG emissions compared to the business-as-usual (BAU) scenario. In preparing the impact analysis for the Esperanza Hills, BAU conditions were conservatively presumed to continue throughout the lifetime of the project. However, a number of statewide programs are in place that will achieve GHG emissions reductions that will attain a very substantial fraction of the AB-32 goal. SCAQMD has estimated that, as shown in Table 15, the adopted low carbon fuel standard, the enhanced renewable portfolio standard, and required enhanced energy efficiencies will combine to achieve 23.9 percent of the 28.9 percent AB-32 goal.

If the remaining 5 percent of GHG reductions can be achieved by local AB-32 initiatives, then the proposed action would not interfere with timely implementation of AB 32. If it can be demonstrated that more than adequate options exist to attain the local mitigation responsibility, mitigation would not be considered to be deferred even if the development plan is not yet finalized. In the absence of an adopted Orange County Climate Action Plan (CAP), reasonable and feasible mitigation measures were evaluated that could achieve the 5 percent reduction as an interim measure to be taken prior to any CAP adoption.

Table 15
GHG Emissions Reductions from State Regulations

Category	Source	Percent of Category	Percent of State Total
Mobile	AB 1493	19.7%	8.9%
	LCFS-auto	7.2%	3.2%
	LCFS-medium	7.2%	0.4%
	Truck efficiency	2.9%	0.2%
	Passenger efficiency	2.8%	1.3%
Area	Res. Energy Efficiency (gas)	9.5%	1.0%
	Non-Res. Energy Efficiency (gas)	9.5%	1.0%
Indirect	RPS	21.0%	3.5%
	Energy efficiency (elec)	15.7%	4.0%
	Solar roofs	1.5%	0.2%
Total			**23.9%**

LCFS = low carbon fuel standard
RPS = renewable portfolio standard
Totals may not sum due to rounding.
Source: http://www.aqmd.gov/ceqa/handbook/GHG/2009/nov19mtg/ghgmtg14.pdf

The California Air Pollution Control Officers Association (CAPCOA) is one of several groups that has developed candidate GHG reduction programs to supplement the statewide AB-32 compliance program. CAPCOA's "CEQA and Climate Change" (2010) is one of the most detailed and annotated mitigation plans outlined. Because it is so comprehensive, and because it quantifies the potential measure effectiveness in great detail, it was applied to the preliminary Esperanza Hills GHG Mitigation Plan.

Five general categories of emissions reduction potential were evaluated, including transportation control measures, energy conservation enhancement, water supply, solid waste generation and miscellaneous measures. Tables 15A through 15E present a detailed breakdown of the mitigation measures and levels of emissions reduction potential that CAPCOA considers feasible on a project-level basis. In presenting the potential effectiveness, the CAPCOA document presents a percent range of documented results. In Tables 15A through 15E, the low end of the effectiveness range is presented. This is considered appropriate because the implementation of multiple programs simultaneously tends to result in duplicated efforts, which reduces the effectiveness of each measure. For example, while some measures may achieve a 3 to 5 percent capture rate independently, they may not achieve maximum efficiency when a larger array of "green" options is employed. Table 16 summarizes the GHG reductions attainable with the application of reasonably available control measures (RACM).

It is assumed that the project area will eventually be annexed to Yorba Linda. The City has requested that the County consult with the City with regard to sustainability initiatives planned to be incorporated as project design features to reduce GHG emissions/climate change impacts. The City, like the County, has no formally adopted climate action plan (CAP). However, any adoption and implementation of mitigation measures for GHG impact minimization under Orange County CEQA responsibilities will be equally effective if the project site is ultimately annexed to the City of Yorba Linda. In recognition of the constant advances in emissions control strategies and technologies, no specific measures in Tables 15A through 15E are proposed for use as mitigation measures on the proposed project. Rather, the proposed mitigation is for the County and project proponent to select an appropriate set of control measures for implementation on the project site prior to first occupancy. These control measures must, in sum, achieve the required 5 percent reduction in GHG emissions. The following is the text of the recommended mitigation measure:

> ***MM GHG:*** *Prior to occupancy of project facilities, the developer/permit holder will implement or develop a plan for implementation of one or more mitigation strategies for the reduction of greenhouse gas (GHG) emissions from the report "CEQA and Climate Change" prepared by the California Air Pollution Control Officers Association (CAPCOA) as updated in 2010. The total benefit of the mitigation strategies must result in a minimum 5 percent reduction in GHG emissions from the business-as-usual value. Alternative strategies not listed in the CAPCOA report may be used with approval of the Orange County Planning Director. The selected strategies, including measures for their long-term maintenance, must be described in a memo submitted to and approved by the County Planning Department prior to initial occupancy of any on-site facility.*

TABLE 15A

Transportation Control Measures	Effectiveness
Bus Shelters for Future Transit	1.0%
Pedestrian Access and Paths though Parking Areas	1.0%
Voluntary Rideshare w/ Incentives	1.0%
Preferential Parking for EVs and Hybrids	1.0%
Electric Vehicle Charge Stations	1.0%
Total (Transportation)	5.0%

Source: CAPCOA (2008), Chapter 7

TABLE 15B

Energy Efficiency	Effectiveness
Energy Star and Cool Roofs	0.5%
On-Site Solar Panels on Flat Roofs	2.0%
Exceed Title 24 Requirements by 10%	3.0%
Solar Orientation of Buildings	0.5%
Low Energy Cooling	0.5%
Energy Star Appliances	0.5%
“Green Building” Materials	0.25%
Shading Mechanisms	0.25%
High Efficiency Lighting Systems	0.5%
Total Energy Conservation	8.0%

Source: CAPCOA (2008), Chapter 7

TABLE 15C

Water Supply	Effectiveness
Use Reclaimed Water	0.5%
Low Flow Fixtures	0.5%
Water Efficient Landscape	5.0%
Total	6.0%

Source: CAPCOA (2008), Chapter 7

TABLE 15D

Solid Waste	Effectiveness
Enhanced Recycling/Recovery Programs	10.0%
Reuse Cut-and-Fill	10.0%
Total	20.0%

Source: CAPCOA (2008), Chapter 7

TABLE 15E

Miscellaneous Measures	Effectiveness	Reduction
Electric Lawnmowers	Benefits Not Quantified	
Enhanced Recycling, Reduction and Reuse		
LEED Certification		
Drought Resistant Landscaping		
Local Farmer's Markets		

Table 16
GHG Reductions Attainable with RCM Implementation

Category	Applies To:	Overall Effectiveness[a]	Overall Percent Reduction[b]	Annual MT Tons Reduced
Transportation Control	Transportation	5.0%	3.3%	227
Water Supply	Water Use	6.0%	0.1%	10
Solid Waste	Solid Waste	20.0%	0.6%	40
Energy Efficiency	Electric and NG	8.0%	1.8%	126
Miscellaneous	All	unknown	unknown	na
Total			**5.8%**	**403**

[a] – percentage reduction within a given source category
[b] – effectiveness within a given source category times the source category share of the total burden

With feasible options and realistic expectations of effectiveness, mitigation levels exceeding the local goal of 5 percent can be demonstrated. Achievement of this emissions reduction goal would require the implementation of the proposed mitigation measures provided above. With available options, project compliance with AB-32 goals and policies can be assured with a reasonable margin of safety.

SUMMARY

As shown in Table 16, the size of the project is such that direct and indirect GHG emissions will exceed the SCAQMD screening level threshold (3,500 $MTCO_2e$ per year) for residential projects by a large margin. This finding is based upon a business-as-usual assumption and does not include statewide or locally sponsored mitigation. State program reductions reduce the emissions figure in the BAU scenario by 23.9 percent. Feasible local reductions, as summarized in Table 15, would result in an additional 5.8 percent reduction. Specific local reductions to be implemented on the site would be determined prior to project occupancy based on then-current strategies and technologies, with additional coordination between the project proponent and the City of Yorba Linda. However, even with implementation of required and discretionary GHG reduction measures, annual emissions cannot be reduced below the SCAQMD's advisory threshold.

APPENDIX

CalEEMod2013.2.2 Computer Model Output

Option 1 Phase 1

- Daily Emissions (lbs per day)
- Annual Emissions (tons per year)

Option 1 Phase 2

- Daily Emissions (lbs per day)
- Annual Emissions (tons per year)

Operational Emissions 2020

CalEEMod Input and Defaults

CO Screening Protocols
Microscale Analysis Input Data

CalEEMod Defaults and Modeled Data

Phase 1

Activity	CalEE Default # Days	Modeled # Days	CalEE Default Equipment	Modeled Equipment
Site Prep	40	30	3 Dozers	3 Dozers
			4 Backhoes	4 Backhoes
Grading	110	175	2 Excavators	2 Excavators
			1 Grader	2 Graders
			1 Dozer	1 Dozer
			2 Scrapers	5 Scrapers
			2 Loader/Backhoes	2 Loader/Backhoes
Construction	1110	700	1 Crane	1 Crane
			3 Forklifts	3 Forklifts
			1 Gen Set	1 Gen Set
			3 Loader/Backhoes	3 Loader/Backhoes
			1 Welder	1 Welder
Paving	75	15	2 Pavers	2 Pavers
			2 Paving Equipment	2 Paving Equipment
			2 Rollers	2 Rollers

Phase 2

Activity	CalEE Default # Days	Modeled # Days	CalEE Default Equipment	Modeled Equipment
Construction	1110	500	1 Crane	1 Crane
			3 Forklifts	3 Forklifts
			1 Gen Set	1 Gen Set
			3 Loader/Backhoes	3 Loader/Backhoes
			1 Welder	1 Welder
Paving	75	15	2 Pavers	2 Pavers
			2 Paving Equipment	2 Paving Equipment
			2 Rollers	2 Rollers

CO SCREENING ANALYSIS PROTOCOLS

(Bay Area AQMD CEQA Guidelines, modified to include congestion/delay)

CO(1-hour) = Vol (major in) * Emfac(25 mph) * DF(major)

+ Vol (major in) * Sec. Delay * Idle (3 mph) * DF(major)

+ Vol(major out) * Emfac(25 mph) * DF(major)

+ Vol(minor in) * Emfac(25 mph) * DF(minor)

+ Vol(minor in) * Sec. delay * Idle(3 mph) * DF(minor)

+ Vol(minor out) * Emfac(25 mph) * DF(minor)

DF(major) = 6.1 / 100,000

DF(minor) = 2.7 / 100,000

Delay = 2.5 sec LOS=A
= 10.0 sec LOS=B
= 20.0 sec LOS=C
= 32.5 sec LOS=D
= 50.0 sec LOS=E
= 75.0 sec LOS=F

Year	Emfac(25) (g/mi)	Idle(3) (g/sec/mile)
2015	4.69	0.052
2020	3.28	0.052
2025	2.47	0.054
2030	2.08	0.056

Source: EMFAC2007

CO(8-hour) = CO(1-hour) * 0.6 (persistence)

Data Used for Microscale Analysis (from turning movements in Traffic Report)

AM - Existing		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1081	812	160	71	A
	San Antonio	1184	1044	185	78	A
	Yorba Ranch	1166	1019	110	140	A
	La Palma	1338	1516	1257	739	C

AM - Existing + Project, Option 1		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1208	855	166	88	A
	San Antonio	1311	1083	185	78	A
	Yorba Ranch	1299	1064	112	146	A
	La Palma	1412	1542	1258	741	C

AM - 2020		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1177	939	175	82	A
	San Antonio	1339	1199	201	85	A
	Yorba Ranch	1322	1166	118	54	A
	La Palma	1500	1664	1358	801	D

AM - 2020 + Project, Option 1		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1304	982	181	99	A
	San Antonio	1466	1242	201	85	A
	Yorba Ranch	1455	1211	120	160	A
	La Palma	1574	1690	1359	803	D

AM - 2035		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1179	942	206	123	A
	San Antonio	1398	1235	201	85	A
	Yorba Ranch	1509	1279	137	172	A
	La Palma	1651	1832	1494	886	D

AM - 2035 + Project, Option 1		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1306	985	212	140	A
	San Antonio	1526	1283	201	85	A
	Yorba Ranch	1643	1323	139	178	A
	La Palma	1725	1858	1495	888	D

AM - Existing + Project, Option 2		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1208	855	166	88	A
	San Antonio	1213	1129	397	150	A
	Yorba Ranch	1193	1097	112	146	A
	La Palma	1412	1542	1258	741	C

AM - 2020 + Project, Option 2		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1304	982	181	99	A
	San Antonio	1143	1488	413	157	A
	Yorba Ranch	1349	1244	120	160	A
	La Palma	1574	1690	1359	803	D

AM - 2035 + Project, Option 2		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1306	985	212	140	A
	San Antonio	1427	1325	413	157	A
	Yorba Ranch	1536	1357	139	178	A
	La Palma	1725	1858	1495	888	D

AM - Existing + Project, Option 2A		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1208	855	166	88	A
	San Antonio	1213	1129	397	150	A
	Yorba Ranch	1193	1097	112	146	A
	La Palma	1412	1542	1258	741	C

AM - 2020 + Project, Option 2A		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1304	982	181	99	A
	San Antonio	1368	1284	413	157	A
	Yorba Ranch	1349	1244	120	160	A

	La Palma	1574	1690	1359	803	D

AM - 2035 + Project, Option 2A		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1306	985	212	140	A
	San Antonio	1427	1325	413	157	A
	Yorba Ranch	1536	1357	139	178	A
	La Palma	1725	1858	1487	888	D

PM - Existing		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1147	977	168	175	A
	San Antonio	1238	1030	131	130	A
	Yorba Ranch	1258	1080	132	140	A
	La Palma	2160	1526	1057	588	C

PM - Existing + Project, Option 1		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1273	1050	187	186	A
	San Antonio	1383	1114	131	130	A
	Yorba Ranch	1403	1164	139	144	A
	La Palma	2240	1572	1059	589	C

PM - 2020		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1256	1114	182	199	A
	San Antonio	1420	1197	148	146	A
	Yorba Ranch	1443	1255	144	155	A
	La Palma	2395	1692	1150	640	C

PM - 2020 + Project, Option 1		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1382	1187	201	199	B
	San Antonio	1565	1281	148	146	A
	Yorba Ranch	1588	1339	151	155	A

	La Palma	2475	1738	1150	640	D

PM - 2035		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1287	1134	202	219	A
	San Antonio	1493	1256	161	146	A
	Yorba Ranch	1621	1362	162	174	A
	La Palma	2635	1867	1261	692	D

PM - 2035 + Project, Option 1		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1413	1207	221	230	B
	San Antonio	1638	1340	161	146	A
	Yorba Ranch	1767	1447	169	178	B
	La Palma	2715	1908	1263	693	D

Esperanza Hills
Turning Movements, p.4

PM - Existing + Project, Option 2		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1152	1376	187	186	A
	San Antonio	1383	1114	271	372	A
	Yorba Ranch	1314	1177	139	144	A
	La Palma	2240	1572	1059	589	C

PM - 2020 + Project, Option 2		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1382	1187	201	199	A
	San Antonio	1565	1281	288	388	A
	Yorba Ranch	1499	1352	151	155	A
	La Palma	2475	1738	1150	640	C

PM - 2035 + Project, Option		Major In	Major	Minor In	Minor	LOS

2			Out		Out	
Yorba Linda Blvd/	Las Palomas	1413	1207	221	230	B
	San Antonio	1638	1340	301	388	A
	Yorba Ranch	1677	1459	169	178	A
	La Palma	2715	1908	1263	693	D

PM - Existing + Project, Option 2A		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1273	1050	187	186	A
	San Antonio	1383	1114	271	372	A
	Yorba Ranch	1314	1177	139	144	A
	La Palma	2240	1572	1059	589	C

PM - 2020 + Project, Option 2A		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1382	1187	201	199	A
	San Antonio	1565	1281	288	388	A
	Yorba Ranch	1499	1352	151	155	A
	La Palma	2475	1738	1150	640	C

PM - 2035 + Project, Option 2A		Major In	Major Out	Minor In	Minor Out	LOS
Yorba Linda Blvd/	Las Palomas	1413	1207	221	230	B
	San Antonio	1638	1340	301	388	A
	Yorba Ranch	1677	1459	169	178	A
	La Palma	2715	1908	1263	693	D

Esperanza Option 1 P1

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	218.00	Dwelling Unit	70.78	392,400.00	623

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Prep 30 days, Grading 175 days, Construction 700 days, Paving 15 days

Off-road Equipment - Prep: 3 dozers, 4 loader/backhoes

Off-road Equipment - Grading: 2 excavators, 2 graders (default is 1), 1 dozer, 5 scrapers (default is 2) 2 loader/backhoes

Off-road Equipment - Construction 1 crane, 3 f/l, 1 gen set, 3 loader/backhoes, 1 welder

Off-road Equipment - Paving: 2 pavers, 2 paving equipment, 2 rollers

Grading - 286700 CY Borrow

Trips and VMT - 35838 haul trips, 1000 ft

Construction Off-road Equipment Mitigation - Tier 3 for scrapers, dozers, excavators and graders

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	75.00	700.00
tblConstructionPhase	NumDays	1,110.00	700.00
tblConstructionPhase	NumDays	110.00	175.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	30.00
tblConstructionPhase	PhaseEndDate	3/12/2021	7/8/2018
tblConstructionPhase	PhaseEndDate	6/20/2018	7/6/2018
tblConstructionPhase	PhaseStartDate	7/7/2018	11/1/2015
tblConstructionPhase	PhaseStartDate	10/15/2015	11/1/2015
tblConstructionPhase	PhaseStartDate	7/9/2018	7/7/2018
tblGrading	AcresOfGrading	1,050.00	275.00
tblGrading	MaterialImported	0.00	286,700.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.20

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	13.8145	150.9499	118.2407	0.1225	18.2675	6.6964	21.3575	9.9840	6.1605	12.8269	0.0000	12,733.3487	12,733.3487	3.5658	0.0000	12,808.2312
2016	8.7434	33.3560	28.7913	0.0481	1.1944	2.2055	3.3999	0.3196	2.0832	2.4028	0.0000	4,570.2918	4,570.2918	0.7562	0.0000	4,586.1711
2017	8.3476	30.8414	27.6781	0.0481	1.1945	1.9922	3.1867	0.3196	1.8809	2.2005	0.0000	4,489.8950	4,489.8950	0.7358	0.0000	4,505.3470
2018	7.8345	27.3275	26.4594	0.0481	1.1945	1.6806	2.8750	0.3196	1.5882	1.9078	0.0000	4,411.7401	4,411.7401	0.7419	0.0000	4,427.3206
Total	**38.7400**	**242.4748**	**201.1696**	**0.2668**	**21.8509**	**12.5746**	**30.8192**	**10.9429**	**11.7129**	**19.3381**	**0.0000**	**26,205.2756**	**26,205.2756**	**5.7997**	**0.0000**	**26,327.0698**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	9.1019	62.6037	94.2938	0.1225	7.2470	2.5950	8.7983	3.9263	2.5494	5.3915	0.0000	12,733.3487	12,733.3487	3.5658	0.0000	12,808.2312
2016	8.7434	33.3560	28.7913	0.0481	1.1944	2.2055	3.3999	0.3196	2.0832	2.4028	0.0000	4,570.2918	4,570.2918	0.7562	0.0000	4,586.1711
2017	8.3476	30.8414	27.6781	0.0481	1.1945	1.9922	3.1867	0.3196	1.8809	2.2005	0.0000	4,489.8950	4,489.8950	0.7358	0.0000	4,505.3470
2018	7.8345	27.3275	26.4594	0.0481	1.1945	1.6806	2.8750	0.3196	1.5882	1.9078	0.0000	4,411.7401	4,411.7401	0.7419	0.0000	4,427.3206
Total	**34.0274**	**154.1286**	**177.2227**	**0.2668**	**10.8305**	**8.4732**	**18.2599**	**4.8851**	**8.1018**	**11.9027**	**0.0000**	**26,205.2756**	**26,205.2756**	**5.7997**	**0.0000**	**26,327.0698**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**12.16**	**36.44**	**11.90**	**0.00**	**50.43**	**32.62**	**40.75**	**55.36**	**30.83**	**38.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	66.2926	1.6596	127.6884	0.1753		16.7515	16.7515		16.7489	16.7489	2,041.9882	3,956.3844	5,998.3726	6.1217	0.1386	6,169.8929
Energy	0.1860	1.5898	0.6765	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.5255	2,029.5255	0.0389	0.0372	2,041.8769
Mobile	7.2449	21.1929	85.3457	0.2386	15.9270	0.3274	16.2545	4.2557	0.3017	4.5574		19,683.8203	19,683.8203	0.7121		19,698.7751
Total	**73.7235**	**24.4423**	**213.7106**	**0.4240**	**15.9270**	**17.2075**	**33.1345**	**4.2557**	**17.1791**	**21.4348**	**2,041.9882**	**25,669.7302**	**27,711.7184**	**6.8727**	**0.1758**	**27,910.5449**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.5496	0.2102	18.1332	9.5000e-004		0.3620	0.3620		0.3592	0.3592	0.0000	4,187.2079	4,187.2079	0.1117	0.0762	4,213.1675
Energy	0.1860	1.5898	0.6765	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.5255	2,029.5255	0.0389	0.0372	2,041.8769
Mobile	7.2449	21.1929	85.3457	0.2386	15.9270	0.3274	16.2545	4.2557	0.3017	4.5574		19,683.8203	19,683.8203	0.7121		19,698.7751
Total	**16.9805**	**22.9929**	**104.1554**	**0.2497**	**15.9270**	**0.8180**	**16.7450**	**4.2557**	**0.7894**	**5.0451**	**0.0000**	**25,900.5538**	**25,900.5538**	**0.8628**	**0.1134**	**25,953.8195**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	76.97	5.93	51.26	41.12	0.00	95.25	49.46	0.00	95.40	76.46	100.00	-0.90	6.54	87.45	35.51	7.01

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	2/11/2015	5	30	
2	Grading	Grading	2/12/2015	10/14/2015	5	175	
3	Building Construction	Building Construction	11/1/2015	7/6/2018	5	700	
4	Architectural Coating	Architectural Coating	11/1/2015	7/8/2018	5	700	
5	Paving	Paving	7/7/2018	7/27/2018	5	15	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 275

Acres of Paving: 0

Residential Indoor: 794,610; Residential Outdoor: 264,870; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	2	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	5	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	35,838.00	14.70	6.90	0.20	LD_Mix	HDT_Mix	HHDT
Building Construction	9	78.00	23.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412		4,111.7444	4,111.7444	1.2275		4,137.5225
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**		**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5225**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0833	0.1042	1.2923	2.5500e-003	0.2012	1.7700e-003	0.2030	0.0534	1.6200e-003	0.0550		221.7418	221.7418	0.0119		221.9925
Total	**0.0833**	**0.1042**	**1.2923**	**2.5500e-003**	**0.2012**	**1.7700e-003**	**0.2030**	**0.0534**	**1.6200e-003**	**0.0550**		**221.7418**	**221.7418**	**0.0119**		**221.9925**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	2.0891	26.2494	23.7344	0.0391		1.5495	1.5495		1.4635	1.4635	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**2.0891**	**26.2494**	**23.7344**	**0.0391**	**7.0458**	**1.5495**	**8.5953**	**3.8730**	**1.4635**	**5.3365**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0833	0.1042	1.2923	2.5500e-003	0.2012	1.7700e-003	0.2030	0.0534	1.6200e-003	0.0550		221.7418	221.7418	0.0119		221.9925
Total	**0.0833**	**0.1042**	**1.2923**	**2.5500e-003**	**0.2012**	**1.7700e-003**	**0.2030**	**0.0534**	**1.6200e-003**	**0.0550**		**221.7418**	**221.7418**	**0.0119**		**221.9925**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.8739	0.0000	7.8739	3.5182	0.0000	3.5182			0.0000			0.0000
Off-Road	12.1664	145.7113	90.5505	0.1127		6.6668	6.6668		6.1334	6.1334		11,837.0499	11,837.0499	3.5339		11,911.2609
Total	**12.1664**	**145.7113**	**90.5505**	**0.1127**	**7.8739**	**6.6668**	**14.5406**	**3.5182**	**6.1334**	**9.6517**		**11,837.0499**	**11,837.0499**	**3.5339**		**11,911.2609**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5093	5.0650	25.5364	5.5800e-003	0.0399	0.0267	0.0666	0.0113	0.0244	0.0357		526.7292	526.7292	0.0121		526.9828
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1389	0.1737	2.1538	4.2500e-003	0.3353	2.9500e-003	0.3383	0.0889	2.7000e-003	0.0916		369.5696	369.5696	0.0199		369.9875
Total	**1.6481**	**5.2387**	**27.6902**	**9.8300e-003**	**0.3752**	**0.0296**	**0.4049**	**0.1002**	**0.0271**	**0.1273**		**896.2988**	**896.2988**	**0.0320**		**896.9703**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0708	0.0000	3.0708	1.3721	0.0000	1.3721			0.0000			0.0000
Off-Road	3.3329	57.3650	66.6036	0.1127		2.5653	2.5653		2.5224	2.5224	0.0000	11,837.0499	11,837.0499	3.5339		11,911.2609
Total	**3.3329**	**57.3650**	**66.6036**	**0.1127**	**3.0708**	**2.5653**	**5.6361**	**1.3721**	**2.5224**	**3.8945**	**0.0000**	**11,837.0499**	**11,837.0499**	**3.5339**		**11,911.2609**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5093	5.0650	25.5364	5.5800e-003	0.0399	0.0267	0.0666	0.0113	0.0244	0.0357		526.7292	526.7292	0.0121		526.9828
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1389	0.1737	2.1538	4.2500e-003	0.3353	2.9500e-003	0.3383	0.0889	2.7000e-003	0.0916		369.5696	369.5696	0.0199		369.9875
Total	**1.6481**	**5.2387**	**27.6902**	**9.8300e-003**	**0.3752**	**0.0296**	**0.4049**	**0.1002**	**0.0271**	**0.1273**		**896.2988**	**896.2988**	**0.0320**		**896.9703**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2166	2.2490	2.4890	5.0100e-003	0.1437	0.0393	0.1830	0.0409	0.0362	0.0771		507.0516	507.0516	3.9600e-003		507.1348
Worker	0.3610	0.4516	5.5999	0.0111	0.8719	7.6700e-003	0.8795	0.2312	7.0300e-003	0.2383		960.8810	960.8810	0.0517		961.9674
Total	**0.5777**	**2.7007**	**8.0890**	**0.0161**	**1.0156**	**0.0470**	**1.0626**	**0.2721**	**0.0432**	**0.3153**		**1,467.9326**	**1,467.9326**	**0.0557**		**1,469.1023**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2166	2.2490	2.4890	5.0100e-003	0.1437	0.0393	0.1830	0.0409	0.0362	0.0771		507.0516	507.0516	3.9600e-003		507.1348
Worker	0.3610	0.4516	5.5999	0.0111	0.8719	7.6700e-003	0.8795	0.2312	7.0300e-003	0.2383		960.8810	960.8810	0.0517		961.9674
Total	**0.5777**	**2.7007**	**8.0890**	**0.0161**	**1.0156**	**0.0470**	**1.0626**	**0.2721**	**0.0432**	**0.3153**		**1,467.9326**	**1,467.9326**	**0.0557**		**1,469.1023**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1915	1.9865	2.2906	5.0000e-003	0.1438	0.0327	0.1765	0.0409	0.0301	0.0710		501.4665	501.4665	3.5800e-003		501.5417
Worker	0.3259	0.4074	5.0702	0.0111	0.8719	7.2900e-003	0.8791	0.2312	6.7000e-003	0.2379		927.7775	927.7775	0.0476		928.7772
Total	**0.5174**	**2.3938**	**7.3607**	**0.0161**	**1.0156**	**0.0400**	**1.0556**	**0.2722**	**0.0368**	**0.3089**		**1,429.2440**	**1,429.2440**	**0.0512**		**1,430.3188**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1915	1.9865	2.2906	5.0000e-003	0.1438	0.0327	0.1765	0.0409	0.0301	0.0710		501.4665	501.4665	3.5800e-003		501.5417
Worker	0.3259	0.4074	5.0702	0.0111	0.8719	7.2900e-003	0.8791	0.2312	6.7000e-003	0.2379		927.7775	927.7775	0.0476		928.7772
Total	**0.5174**	**2.3938**	**7.3607**	**0.0161**	**1.0156**	**0.0400**	**1.0556**	**0.2722**	**0.0368**	**0.3089**		**1,429.2440**	**1,429.2440**	**0.0512**		**1,430.3188**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1755	1.8075	2.1541	5.0000e-003	0.1438	0.0292	0.1730	0.0410	0.0268	0.0678		493.3441	493.3441	3.4600e-003		493.4168
Worker	0.2928	0.3678	4.5861	0.0110	0.8719	7.0100e-003	0.8789	0.2312	6.4700e-003	0.2377		892.2681	892.2681	0.0439		893.1905
Total	**0.4683**	**2.1753**	**6.7402**	**0.0160**	**1.0157**	**0.0362**	**1.0518**	**0.2722**	**0.0333**	**0.3055**		**1,385.6123**	**1,385.6123**	**0.0474**		**1,386.6073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1755	1.8075	2.1541	5.0000e-003	0.1438	0.0292	0.1730	0.0410	0.0268	0.0678		493.3441	493.3441	3.4600e-003		493.4168
Worker	0.2928	0.3678	4.5861	0.0110	0.8719	7.0100e-003	0.8789	0.2312	6.4700e-003	0.2377		892.2681	892.2681	0.0439		893.1905
Total	**0.4683**	**2.1753**	**6.7402**	**0.0160**	**1.0157**	**0.0362**	**1.0518**	**0.2722**	**0.0333**	**0.3055**		**1,385.6123**	**1,385.6123**	**0.0474**		**1,386.6073**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1646	1.6589	2.0522	4.9900e-003	0.1438	0.0275	0.1713	0.0410	0.0253	0.0663		485.0656	485.0656	3.4400e-003		485.1378
Worker	0.2639	0.3336	4.1659	0.0110	0.8719	6.8200e-003	0.8787	0.2312	6.3100e-003	0.2375		859.0680	859.0680	0.0408		859.9240
Total	**0.4285**	**1.9925**	**6.2181**	**0.0160**	**1.0157**	**0.0343**	**1.0500**	**0.2722**	**0.0316**	**0.3038**		**1,344.1335**	**1,344.1335**	**0.0442**		**1,345.0618**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1646	1.6589	2.0522	4.9900e-003	0.1438	0.0275	0.1713	0.0410	0.0253	0.0663		485.0656	485.0656	3.4400e-003		485.1378
Worker	0.2639	0.3336	4.1659	0.0110	0.8719	6.8200e-003	0.8787	0.2312	6.3100e-003	0.2375		859.0680	859.0680	0.0408		859.9240
Total	**0.4285**	**1.9925**	**6.2181**	**0.0160**	**1.0157**	**0.0343**	**1.0500**	**0.2722**	**0.0316**	**0.3038**		**1,344.1335**	**1,344.1335**	**0.0442**		**1,345.0618**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**4.7911**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

3.5 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0926	1.1487	2.2700e-003	0.1788	1.5700e-003	0.1804	0.0474	1.4400e-003	0.0489		197.1038	197.1038	0.0106		197.3267
Total	**0.0741**	**0.0926**	**1.1487**	**2.2700e-003**	**0.1788**	**1.5700e-003**	**0.1804**	**0.0474**	**1.4400e-003**	**0.0489**		**197.1038**	**197.1038**	**0.0106**		**197.3267**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**4.7911**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

3.5 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0741	0.0926	1.1487	2.2700e-003	0.1788	1.5700e-003	0.1804	0.0474	1.4400e-003	0.0489		197.1038	197.1038	0.0106		197.3267
Total	**0.0741**	**0.0926**	**1.1487**	**2.2700e-003**	**0.1788**	**1.5700e-003**	**0.1804**	**0.0474**	**1.4400e-003**	**0.0489**		**197.1038**	**197.1038**	**0.0106**		**197.3267**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**4.7530**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.5 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0836	1.0400	2.2700e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3700e-003	0.0488		190.3133	190.3133	9.7600e-003		190.5184
Total	**0.0668**	**0.0836**	**1.0400**	**2.2700e-003**	**0.1788**	**1.4900e-003**	**0.1803**	**0.0474**	**1.3700e-003**	**0.0488**		**190.3133**	**190.3133**	**9.7600e-003**		**190.5184**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**4.7530**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.5 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0668	0.0836	1.0400	2.2700e-003	0.1788	1.4900e-003	0.1803	0.0474	1.3700e-003	0.0488		190.3133	190.3133	9.7600e-003		190.5184
Total	**0.0668**	**0.0836**	**1.0400**	**2.2700e-003**	**0.1788**	**1.4900e-003**	**0.1803**	**0.0474**	**1.3700e-003**	**0.0488**		**190.3133**	**190.3133**	**9.7600e-003**		**190.5184**

3.5 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**4.7169**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.5 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0754	0.9407	2.2700e-003	0.1788	1.4400e-003	0.1803	0.0474	1.3300e-003	0.0488		183.0294	183.0294	9.0100e-003		183.2186
Total	**0.0601**	**0.0754**	**0.9407**	**2.2700e-003**	**0.1788**	**1.4400e-003**	**0.1803**	**0.0474**	**1.3300e-003**	**0.0488**		**183.0294**	**183.0294**	**9.0100e-003**		**183.2186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**4.7169**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.5 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0754	0.9407	2.2700e-003	0.1788	1.4400e-003	0.1803	0.0474	1.3300e-003	0.0488		183.0294	183.0294	9.0100e-003		183.2186
Total	**0.0601**	**0.0754**	**0.9407**	**2.2700e-003**	**0.1788**	**1.4400e-003**	**0.1803**	**0.0474**	**1.3300e-003**	**0.0488**		**183.0294**	**183.0294**	**9.0100e-003**		**183.2186**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**4.6832**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0541	0.0684	0.8545	2.2600e-003	0.1788	1.4000e-003	0.1802	0.0474	1.3000e-003	0.0487		176.2191	176.2191	8.3600e-003		176.3947
Total	**0.0541**	**0.0684**	**0.8545**	**2.2600e-003**	**0.1788**	**1.4000e-003**	**0.1802**	**0.0474**	**1.3000e-003**	**0.0487**		**176.2191**	**176.2191**	**8.3600e-003**		**176.3947**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.3845					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**4.6832**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.5 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0541	0.0684	0.8545	2.2600e-003	0.1788	1.4000e-003	0.1802	0.0474	1.3000e-003	0.0487		176.2191	176.2191	8.3600e-003		176.3947
Total	**0.0541**	**0.0684**	**0.8545**	**2.2600e-003**	**0.1788**	**1.4000e-003**	**0.1802**	**0.0474**	**1.3000e-003**	**0.0487**		**176.2191**	**176.2191**	**8.3600e-003**		**176.3947**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635		2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**		**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0508	0.0642	0.8011	2.1200e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		165.2054	165.2054	7.8400e-003		165.3700
Total	**0.0508**	**0.0642**	**0.8011**	**2.1200e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**165.2054**	**165.2054**	**7.8400e-003**		**165.3700**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6114	17.1628	14.4944	0.0223		0.9386	0.9386		0.8635	0.8635	0.0000	2,245.2695	2,245.2695	0.6990		2,259.9481
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6114**	**17.1628**	**14.4944**	**0.0223**		**0.9386**	**0.9386**		**0.8635**	**0.8635**	**0.0000**	**2,245.2695**	**2,245.2695**	**0.6990**		**2,259.9481**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0508	0.0642	0.8011	2.1200e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		165.2054	165.2054	7.8400e-003		165.3700
Total	**0.0508**	**0.0642**	**0.8011**	**2.1200e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**165.2054**	**165.2054**	**7.8400e-003**		**165.3700**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.2449	21.1929	85.3457	0.2386	15.9270	0.3274	16.2545	4.2557	0.3017	4.5574		19,683.8203	19,683.8203	0.7121		19,698.7751
Unmitigated	7.2449	21.1929	85.3457	0.2386	15.9270	0.3274	16.2545	4.2557	0.3017	4.5574		19,683.8203	19,683.8203	0.7121		19,698.7751

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,086.26	2,197.44	1911.86	7,098,206	7,098,206
Total	2,086.26	2,197.44	1,911.86	7,098,206	7,098,206

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511172	0.060004	0.180590	0.138995	0.042398	0.006681	0.016070	0.032568	0.001938	0.002493	0.004370	0.000586	0.002135

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1860	1.5898	0.6765	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.5255	2,029.5255	0.0389	0.0372	2,041.8769
NaturalGas Unmitigated	0.1860	1.5898	0.6765	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.5255	2,029.5255	0.0389	0.0372	2,041.8769

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	17251	0.1860	1.5898	0.6765	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.5255	2,029.5255	0.0389	0.0372	2,041.8769
Total		**0.1860**	**1.5898**	**0.6765**	**0.0102**		**0.1285**	**0.1285**		**0.1285**	**0.1285**		**2,029.5255**	**2,029.5255**	**0.0389**	**0.0372**	**2,041.8769**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	17.251	0.1860	1.5898	0.6765	0.0102		0.1285	0.1285		0.1285	0.1285		2,029.5255	2,029.5255	0.0389	0.0372	2,041.8769
Total		**0.1860**	**1.5898**	**0.6765**	**0.0102**		**0.1285**	**0.1285**		**0.1285**	**0.1285**		**2,029.5255**	**2,029.5255**	**0.0389**	**0.0372**	**2,041.8769**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.5496	0.2102	18.1332	9.5000e-004		0.3620	0.3620		0.3592	0.3592	0.0000	4,187.2079	4,187.2079	0.1117	0.0762	4,213.1675
Unmitigated	66.2926	1.6596	127.6884	0.1753		16.7515	16.7515		16.7489	16.7489	2,041.9882	3,956.3844	5,998.3726	6.1217	0.1386	6,169.8929

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.8409					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.7695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	57.1239	1.4494	109.5759	0.1743		16.6527	16.6527		16.6500	16.6500	2,041.9882	3,924.0000	5,965.9882	6.0896	0.1386	6,136.8345
Landscaping	0.5583	0.2102	18.1125	9.5000e-004		0.0989	0.0989		0.0989	0.0989		32.3844	32.3844	0.0321		33.0584
Total	**66.2926**	**1.6596**	**127.6884**	**0.1753**		**16.7515**	**16.7515**		**16.7489**	**16.7489**	**2,041.9882**	**3,956.3844**	**5,998.3726**	**6.1217**	**0.1386**	**6,169.8929**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	7.7695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3809	2.0000e-005	0.0208	0.0000		0.2631	0.2631		0.2604	0.2604	0.0000	4,154.8235	4,154.8235	0.0796	0.0762	4,180.1091
Landscaping	0.5583	0.2102	18.1125	9.5000e-004		0.0989	0.0989		0.0989	0.0989		32.3844	32.3844	0.0321		33.0584
Architectural Coating	0.8409					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**9.5496**	**0.2103**	**18.1332**	**9.5000e-004**		**0.3620**	**0.3620**		**0.3592**	**0.3592**	**0.0000**	**4,187.2079**	**4,187.2079**	**0.1117**	**0.0762**	**4,213.1675**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Option 1 Phase 2

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	160.00	Dwelling Unit	51.95	288,000.00	458

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction: 2 years, Paving 3 weeks

Off-road Equipment - Construction: 1 crane, 3 forklifts, 1 gen set, 3 loader/backhoes, 1 loader

Off-road Equipment - Paving: 2 pavers, 2 paving equipment, 2 rollers

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	500.00
tblConstructionPhase	NumDays	1,110.00	500.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	PhaseEndDate	10/29/2021	11/29/2019
tblConstructionPhase	PhaseEndDate	12/20/2019	1/21/2020
tblConstructionPhase	PhaseStartDate	11/30/2019	1/1/2018
tblConstructionPhase	PhaseStartDate	11/30/2019	1/1/2020
tblProjectCharacteristics	OperationalYear	2014	2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	7.8028	26.7547	24.1488	0.0429	0.8887	1.6697	2.5584	0.2378	1.5783	1.8160	0.0000	3,982.7961	3,982.7961	0.7003	0.0000	3,997.5027
2019	7.4326	24.1804	23.4281	0.0430	0.8887	1.4374	2.3261	0.2378	1.3588	1.5966	0.0000	3,925.7878	3,925.7878	0.6851	0.0000	3,940.1749
2020	1.3683	13.8327	14.9554	0.0244	0.1677	0.7402	0.9079	0.0445	0.6810	0.7254	0.0000	2,307.2292	2,307.2292	0.7051	0.0000	2,322.0370
Total	**16.6037**	**64.7678**	**62.5322**	**0.1103**	**1.9451**	**3.8473**	**5.7924**	**0.5200**	**3.6180**	**4.1380**	**0.0000**	**10,215.8131**	**10,215.8131**	**2.0906**	**0.0000**	**10,259.7146**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	7.8028	26.7547	24.1488	0.0429	0.8887	1.6697	2.5584	0.2378	1.5783	1.8160	0.0000	3,982.7961	3,982.7961	0.7003	0.0000	3,997.5027
2019	7.4326	24.1804	23.4281	0.0430	0.8887	1.4374	2.3261	0.2378	1.3588	1.5966	0.0000	3,925.7878	3,925.7878	0.6851	0.0000	3,940.1749
2020	1.3683	13.8327	14.9554	0.0244	0.1677	0.7402	0.9079	0.0445	0.6810	0.7254	0.0000	2,307.2292	2,307.2292	0.7051	0.0000	2,322.0370
Total	**16.6037**	**64.7678**	**62.5322**	**0.1103**	**1.9451**	**3.8473**	**5.7924**	**0.5200**	**3.6180**	**4.1380**	**0.0000**	**10,215.8131**	**10,215.8131**	**2.0906**	**0.0000**	**10,259.7146**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Area	48.6486	1.2169	93.6668	0.1287		12.2950	12.2950		12.2930	12.2930	1,498.7069	2,903.7684	4,402.4753	4.4926	0.1017	4,528.3538
Energy	0.1365	1.1668	0.4965	7.4500e-003		0.0943	0.0943		0.0943	0.0943		1,489.5600	1,489.5600	0.0286	0.0273	1,498.6253
Mobile	4.2266	9.7433	48.3632	0.1633	11.6468	0.1619	11.8087	3.1078	0.1495	3.2573		12,437.0918	12,437.0918	0.4381		12,446.2917
Total	**53.0117**	**12.1270**	**142.5265**	**0.2994**	**11.6468**	**12.5512**	**24.1980**	**3.1078**	**12.5368**	**15.6447**	**1,498.7069**	**16,830.4202**	**18,329.1272**	**4.9593**	**0.1290**	**18,473.2707**

Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Area	7.0024	0.1532	13.2593	7.0000e-004		0.2660	0.2660		0.2639	0.2639	0.0000	3,073.1801	3,073.1801	0.0816	0.0559	3,092.2251
Energy	0.1365	1.1668	0.4965	7.4500e-003		0.0943	0.0943		0.0943	0.0943		1,489.5600	1,489.5600	0.0286	0.0273	1,498.6253
Mobile	4.2266	9.7433	48.3632	0.1633	11.6468	0.1619	11.8087	3.1078	0.1495	3.2573		12,437.0918	12,437.0918	0.4381		12,446.2917
Total	**11.3655**	**11.0633**	**62.1190**	**0.1715**	**11.6468**	**0.5222**	**12.1690**	**3.1078**	**0.5077**	**3.6156**	**0.0000**	**16,999.8320**	**16,999.8320**	**0.5483**	**0.0832**	**17,037.1420**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	78.56	8.77	56.42	42.73	0.00	95.84	49.71	0.00	95.95	76.89	100.00	-1.01	7.25	88.94	35.50	7.77

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2018	11/29/2019	5	500	
2	Architectural Coating	Architectural Coating	1/1/2018	11/29/2019	5	500	
3	Paving	Paving	1/1/2020	1/21/2020	5	15	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 583,200; Residential Outdoor: 194,400; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	58.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1284	1.2281	1.5518	3.6700e-003	0.1063	0.0196	0.1259	0.0303	0.0180	0.0483		356.5026	356.5026	2.5200e-003		356.5555
Worker	0.1672	0.2154	2.6598	7.8700e-003	0.6483	4.3800e-003	0.6527	0.1719	4.0500e-003	0.1760		608.9222	608.9222	0.0268		609.4850
Total	**0.2956**	**1.4435**	**4.2116**	**0.0115**	**0.7546**	**0.0240**	**0.7785**	**0.2022**	**0.0221**	**0.2243**		**965.4248**	**965.4248**	**0.0293**		**966.0405**

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1284	1.2281	1.5518	3.6700e-003	0.1063	0.0196	0.1259	0.0303	0.0180	0.0483		356.5026	356.5026	2.5200e-003		356.5555
Worker	0.1672	0.2154	2.6598	7.8700e-003	0.6483	4.3800e-003	0.6527	0.1719	4.0500e-003	0.1760		608.9222	608.9222	0.0268		609.4850
Total	**0.2956**	**1.4435**	**4.2116**	**0.0115**	**0.7546**	**0.0240**	**0.7785**	**0.2022**	**0.0221**	**0.2243**		**965.4248**	**965.4248**	**0.0293**		**966.0405**

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083		2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**		**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1204	1.1391	1.4695	3.6700e-003	0.1063	0.0183	0.1246	0.0303	0.0168	0.0471		351.5465	351.5465	2.5400e-003		351.5998
Worker	0.1565	0.1996	2.4831	7.9000e-003	0.6483	4.4100e-003	0.6527	0.1719	4.0900e-003	0.1760		589.9690	589.9690	0.0256		590.5062
Total	**0.2769**	**1.3387**	**3.9527**	**0.0116**	**0.7546**	**0.0227**	**0.7773**	**0.2022**	**0.0209**	**0.2231**		**941.5155**	**941.5155**	**0.0281**		**942.1060**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1204	1.1391	1.4695	3.6700e-003	0.1063	0.0183	0.1246	0.0303	0.0168	0.0471		351.5465	351.5465	2.5400e-003		351.5998
Worker	0.1565	0.1996	2.4831	7.9000e-003	0.6483	4.4100e-003	0.6527	0.1719	4.0900e-003	0.1760		589.9690	589.9690	0.0256		590.5062
Total	**0.2769**	**1.3387**	**3.9527**	**0.0116**	**0.7546**	**0.0227**	**0.7773**	**0.2022**	**0.0209**	**0.2231**		**941.5155**	**941.5155**	**0.0281**		**942.1060**

3.3 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.5052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**4.8039**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0346	0.0446	0.5503	1.6300e-003	0.1341	9.1000e-004	0.1350	0.0356	8.4000e-004	0.0364		125.9839	125.9839	5.5400e-003		126.1003
Total	**0.0346**	**0.0446**	**0.5503**	**1.6300e-003**	**0.1341**	**9.1000e-004**	**0.1350**	**0.0356**	**8.4000e-004**	**0.0364**		**125.9839**	**125.9839**	**5.5400e-003**		**126.1003**

3.3 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.5052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**4.8039**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0346	0.0446	0.5503	1.6300e-003	0.1341	9.1000e-004	0.1350	0.0356	8.4000e-004	0.0364		125.9839	125.9839	5.5400e-003		126.1003
Total	**0.0346**	**0.0446**	**0.5503**	**1.6300e-003**	**0.1341**	**9.1000e-004**	**0.1350**	**0.0356**	**8.4000e-004**	**0.0364**		**125.9839**	**125.9839**	**5.5400e-003**		**126.1003**

3.3 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.5052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		281.9473
Total	**4.7717**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**281.9473**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0324	0.0413	0.5138	1.6400e-003	0.1341	9.1000e-004	0.1350	0.0356	8.5000e-004	0.0364		122.0625	122.0625	5.2900e-003		122.1737
Total	**0.0324**	**0.0413**	**0.5138**	**1.6400e-003**	**0.1341**	**9.1000e-004**	**0.1350**	**0.0356**	**8.5000e-004**	**0.0364**		**122.0625**	**122.0625**	**5.2900e-003**		**122.1737**

3.3 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.5052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		281.9473
Total	**4.7717**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**281.9473**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0324	0.0413	0.5138	1.6400e-003	0.1341	9.1000e-004	0.1350	0.0356	8.5000e-004	0.0364		122.0625	122.0625	5.2900e-003		122.1737
Total	**0.0324**	**0.0413**	**0.5138**	**1.6400e-003**	**0.1341**	**9.1000e-004**	**0.1350**	**0.0356**	**8.5000e-004**	**0.0364**		**122.0625**	**122.0625**	**5.2900e-003**		**122.1737**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799		2,160.757 1	2,160.757 1	0.6988		2,175.432 6
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**		**2,160.757 1**	**2,160.757 1**	**0.6988**		**2,175.432 6**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0383	0.0482	0.6030	2.0400e-003	0.1677	1.1500e-003	0.1688	0.0445	1.0600e-003	0.0455		146.4720	146.4720	6.3000e-003		146.6044
Total	**0.0383**	**0.0482**	**0.6030**	**2.0400e-003**	**0.1677**	**1.1500e-003**	**0.1688**	**0.0445**	**1.0600e-003**	**0.0455**		**146.4720**	**146.4720**	**6.3000e-003**		**146.6044**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3301	13.7845	14.3523	0.0223		0.7390	0.7390		0.6799	0.6799	0.0000	2,160.757 1	2,160.757 1	0.6988		2,175.432 6
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3301**	**13.7845**	**14.3523**	**0.0223**		**0.7390**	**0.7390**		**0.6799**	**0.6799**	**0.0000**	**2,160.757 1**	**2,160.757 1**	**0.6988**		**2,175.432 6**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0383	0.0482	0.6030	2.0400e-003	0.1677	1.1500e-003	0.1688	0.0445	1.0600e-003	0.0455		146.4720	146.4720	6.3000e-003		146.6044
Total	**0.0383**	**0.0482**	**0.6030**	**2.0400e-003**	**0.1677**	**1.1500e-003**	**0.1688**	**0.0445**	**1.0600e-003**	**0.0455**		**146.4720**	**146.4720**	**6.3000e-003**		**146.6044**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.2266	9.7433	48.3632	0.1633	11.6468	0.1619	11.8087	3.1078	0.1495	3.2573		12,437.0918	12,437.0918	0.4381		12,446.2917
Unmitigated	4.2266	9.7433	48.3632	0.1633	11.6468	0.1619	11.8087	3.1078	0.1495	3.2573		12,437.0918	12,437.0918	0.4381		12,446.2917

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,531.20	1,612.80	1403.20	5,209,692	5,209,692
Total	1,531.20	1,612.80	1,403.20	5,209,692	5,209,692

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.508857	0.056420	0.193204	0.150829	0.041936	0.005921	0.015893	0.015805	0.001454	0.002159	0.004747	0.000498	0.002277

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.1365	1.1668	0.4965	7.4500e-003		0.0943	0.0943		0.0943	0.0943		1,489.5600	1,489.5600	0.0286	0.0273	1,498.6253
NaturalGas Unmitigated	0.1365	1.1668	0.4965	7.4500e-003		0.0943	0.0943		0.0943	0.0943		1,489.5600	1,489.5600	0.0286	0.0273	1,498.6253

5.2 Energy by Land Use - NaturalGas

Unmitigated

Land Use	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	kBTU/yr	lb/day										lb/day					
Single Family Housing	12661.3	0.1365	1.1668	0.4965	7.4500e-003		0.0943	0.0943		0.0943	0.0943		1,489.5600	1,489.5600	0.0286	0.0273	1,498.6253
Total		**0.1365**	**1.1668**	**0.4965**	**7.4500e-003**		**0.0943**	**0.0943**		**0.0943**	**0.0943**		**1,489.5600**	**1,489.5600**	**0.0286**	**0.0273**	**1,498.6253**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	12.6613	0.1365	1.1668	0.4965	7.4500e-003		0.0943	0.0943		0.0943	0.0943		1,489.5600	1,489.5600	0.0286	0.0273	1,498.6253
Total		**0.1365**	**1.1668**	**0.4965**	**7.4500e-003**		**0.0943**	**0.0943**		**0.0943**	**0.0943**		**1,489.5600**	**1,489.5600**	**0.0286**	**0.0273**	**1,498.6253**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.0024	0.1532	13.2593	7.0000e-004		0.2660	0.2660		0.2639	0.2639	0.0000	3,073.1801	3,073.1801	0.0816	0.0559	3,092.2251
Unmitigated	48.6486	1.2169	93.6668	0.1287		12.2950	12.2950		12.2930	12.2930	1,498.7069	2,903.7684	4,402.4753	4.4926	0.1017	4,528.3538

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.7024					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	41.9258	1.0637	80.4227	0.1280		12.2221	12.2221		12.2202	12.2202	1,498.7069	2,880.0000	4,378.7069	4.4694	0.1017	4,504.0988
Landscaping	0.4033	0.1532	13.2441	7.0000e-004		0.0728	0.0728		0.0728	0.0728		23.7684	23.7684	0.0232		24.2551
Total	**48.6486**	**1.2169**	**93.6668**	**0.1287**		**12.2950**	**12.2950**		**12.2930**	**12.2930**	**1,498.7069**	**2,903.7684**	**4,402.4753**	**4.4926**	**0.1017**	**4,528.3538**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.7024					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.2795	1.0000e-005	0.0153	0.0000		0.1931	0.1931		0.1911	0.1911	0.0000	3,049.4118	3,049.4118	0.0585	0.0559	3,067.9700
Landscaping	0.4033	0.1532	13.2441	7.0000e-004		0.0728	0.0728		0.0728	0.0728		23.7684	23.7684	0.0232		24.2551
Total	**7.0024**	**0.1532**	**13.2593**	**7.0000e-004**		**0.2660**	**0.2660**		**0.2639**	**0.2639**	**0.0000**	**3,073.1801**	**3,073.1801**	**0.0816**	**0.0559**	**3,092.2251**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Esperanza Option 1 P1

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	218.00	Dwelling Unit	70.78	392,400.00	623

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Prep 30 days, Grading 175 days, Construction 700 days, Paving 15 days

Off-road Equipment - Prep: 3 dozers, 4 loader/backhoes

Off-road Equipment - Grading: 2 excavators, 2 graders (default is 1), 1 dozer, 5 scrapers (default is 2) 2 loader/backhoes

Off-road Equipment - Construction 1 crane, 3 f/l, 1 gen set, 3 loader/backhoes, 1 welder

Off-road Equipment - Paving: 2 pavers, 2 paving equipment, 2 rollers

Grading - 286700 CY Borrow

Trips and VMT - 35838 haul trips, 1000 ft

Construction Off-road Equipment Mitigation - Tier 3 for scrapers, dozers, excavators and graders

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	75.00	700.00
tblConstructionPhase	NumDays	1,110.00	700.00
tblConstructionPhase	NumDays	110.00	175.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	40.00	30.00
tblConstructionPhase	PhaseEndDate	3/12/2021	7/8/2018
tblConstructionPhase	PhaseEndDate	6/20/2018	7/6/2018
tblConstructionPhase	PhaseStartDate	7/7/2018	11/1/2015
tblConstructionPhase	PhaseStartDate	10/15/2015	11/1/2015
tblConstructionPhase	PhaseStartDate	7/9/2018	7/7/2018
tblGrading	AcresOfGrading	1,050.00	275.00
tblGrading	MaterialImported	0.00	286,700.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	5.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripLength	20.00	0.20

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	1.5035	14.8517	12.0967	0.0124	1.0210	0.6849	1.7059	0.4731	0.6315	1.1046	0.0000	1,158.3750	1,158.3750	0.3155	0.0000	1,165.0003
2016	1.1407	4.3731	3.7630	6.1900e-003	0.1531	0.2878	0.4409	0.0410	0.2719	0.3129	0.0000	534.5781	534.5781	0.0895	0.0000	536.4581
2017	1.0847	4.0274	3.6056	6.1700e-003	0.1525	0.2590	0.4115	0.0409	0.2445	0.2854	0.0000	523.2755	523.2755	0.0868	0.0000	525.0979
2018	0.5410	1.9824	1.9049	3.3800e-003	0.0804	0.1205	0.2009	0.0215	0.1137	0.1352	0.0000	283.3728	283.3728	0.0488	0.0000	284.3971
Total	**4.2699**	**25.2346**	**21.3702**	**0.0281**	**1.4069**	**1.3523**	**2.7592**	**0.5765**	**1.2616**	**1.8381**	**0.0000**	**2,499.6013**	**2,499.6013**	**0.5406**	**0.0000**	**2,510.9534**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.6830	6.6618	9.7179	0.0124	0.4354	0.3030	0.7384	0.1945	0.2948	0.4893	0.0000	1,158.3737	1,158.3737	0.3155	0.0000	1,164.9990
2016	1.1407	4.3731	3.7630	6.1900e-003	0.1531	0.2878	0.4409	0.0410	0.2719	0.3129	0.0000	534.5777	534.5777	0.0895	0.0000	536.4577
2017	1.0847	4.0274	3.6056	6.1700e-003	0.1525	0.2590	0.4115	0.0409	0.2445	0.2854	0.0000	523.2751	523.2751	0.0868	0.0000	525.0975
2018	0.5410	1.9824	1.9049	3.3800e-003	0.0804	0.1205	0.2009	0.0215	0.1137	0.1352	0.0000	283.3725	283.3725	0.0488	0.0000	284.3969
Total	**3.4494**	**17.0447**	**18.9913**	**0.0281**	**0.8213**	**0.9703**	**1.7916**	**0.2979**	**0.9249**	**1.2228**	**0.0000**	**2,499.5990**	**2,499.5990**	**0.5406**	**0.0000**	**2,510.9511**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.22**	**32.46**	**11.13**	**0.00**	**41.62**	**28.25**	**35.07**	**48.33**	**26.69**	**33.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3552	0.0444	3.6338	2.3000e-003		0.2205	0.2205		0.2205	0.2205	23.1558	48.1697	71.3255	0.0727	1.5700e-003	73.3393
Energy	0.0340	0.2901	0.1235	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	778.2954	778.2954	0.0268	0.0104	782.0712
Mobile	1.2209	3.9081	14.5599	0.0394	2.6903	0.0564	2.7467	0.7199	0.0519	0.7719	0.0000	2,957.1890	2,957.1890	0.1111	0.0000	2,959.5212
Waste						0.0000	0.0000		0.0000	0.0000	51.8500	0.0000	51.8500	3.0643	0.0000	116.1992
Water						0.0000	0.0000		0.0000	0.0000	4.5061	81.3940	85.9002	0.4666	0.0117	99.3258
Total	**3.6101**	**4.2427**	**18.3171**	**0.0436**	**2.6903**	**0.3003**	**2.9907**	**0.7199**	**0.2959**	**1.0158**	**79.5119**	**3,865.0481**	**3,944.5600**	**3.7413**	**0.0236**	**4,030.4565**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.6460	0.0263	2.2643	1.2000e-004		0.0157	0.0157		0.0156	0.0156	0.0000	50.7872	50.7872	4.5400e-003	8.6000e-004	51.1504
Energy	0.0340	0.2901	0.1235	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	778.2954	778.2954	0.0268	0.0104	782.0712
Mobile	1.2209	3.9081	14.5599	0.0394	2.6903	0.0564	2.7467	0.7199	0.0519	0.7719	0.0000	2,957.1890	2,957.1890	0.1111	0.0000	2,959.5212
Waste						0.0000	0.0000		0.0000	0.0000	51.8500	0.0000	51.8500	3.0643	0.0000	116.1992
Water						0.0000	0.0000		0.0000	0.0000	4.5061	81.3940	85.9002	0.4665	0.0117	99.3186
Total	**2.9008**	**4.2245**	**16.9477**	**0.0414**	**2.6903**	**0.0955**	**2.7858**	**0.7199**	**0.0910**	**0.8109**	**56.3561**	**3,867.6656**	**3,924.0217**	**3.6731**	**0.0229**	**4,008.2605**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.65**	**0.43**	**7.48**	**5.00**	**0.00**	**68.21**	**6.85**	**0.00**	**69.25**	**20.17**	**29.12**	**-0.07**	**0.52**	**1.82**	**3.09**	**0.55**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	2/11/2015	5	30	
2	Grading	Grading	2/12/2015	10/14/2015	5	175	
3	Building Construction	Building Construction	11/1/2015	7/6/2018	5	700	
4	Architectural Coating	Architectural Coating	11/1/2015	7/8/2018	5	700	
5	Paving	Paving	7/7/2018	7/27/2018	5	15	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 275

Acres of Paving: 0

Residential Indoor: 794,610; Residential Outdoor: 264,870; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	2	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	5	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	12	30.00	0.00	35,838.00	14.70	6.90	0.20	LD_Mix	HDT_Mix	HHDT
Building Construction	9	78.00	23.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0789	0.8533	0.6395	5.9000e-004		0.0463	0.0463		0.0426	0.0426	0.0000	55.9517	55.9517	0.0167	0.0000	56.3025
Total	**0.0789**	**0.8533**	**0.6395**	**5.9000e-004**	**0.2710**	**0.0463**	**0.3173**	**0.1490**	**0.0426**	**0.1916**	**0.0000**	**55.9517**	**55.9517**	**0.0167**	**0.0000**	**56.3025**

3.2 Site Preparation - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	1.7700e-003	0.0184	4.0000e-005	2.9600e-003	3.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.8746	2.8746	1.6000e-004	0.0000	2.8780
Total	**1.2100e-003**	**1.7700e-003**	**0.0184**	**4.0000e-005**	**2.9600e-003**	**3.0000e-005**	**2.9900e-003**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**0.0000**	**2.8746**	**2.8746**	**1.6000e-004**	**0.0000**	**2.8780**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1057	0.0000	0.1057	0.0581	0.0000	0.0581	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0313	0.3937	0.3560	5.9000e-004		0.0232	0.0232		0.0220	0.0220	0.0000	55.9516	55.9516	0.0167	0.0000	56.3024
Total	**0.0313**	**0.3937**	**0.3560**	**5.9000e-004**	**0.1057**	**0.0232**	**0.1289**	**0.0581**	**0.0220**	**0.0800**	**0.0000**	**55.9516**	**55.9516**	**0.0167**	**0.0000**	**56.3024**

3.2 Site Preparation - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2100e-003	1.7700e-003	0.0184	4.0000e-005	2.9600e-003	3.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.8746	2.8746	1.6000e-004	0.0000	2.8780
Total	**1.2100e-003**	**1.7700e-003**	**0.0184**	**4.0000e-005**	**2.9600e-003**	**3.0000e-005**	**2.9900e-003**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**0.0000**	**2.8746**	**2.8746**	**1.6000e-004**	**0.0000**	**2.8780**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6890	0.0000	0.6890	0.3078	0.0000	0.3078	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0646	12.7497	7.9232	9.8600e-003		0.5833	0.5833		0.5367	0.5367	0.0000	939.6092	939.6092	0.2805	0.0000	945.5000
Total	**1.0646**	**12.7497**	**7.9232**	**9.8600e-003**	**0.6890**	**0.5833**	**1.2723**	**0.3078**	**0.5367**	**0.8445**	**0.0000**	**939.6092**	**939.6092**	**0.2805**	**0.0000**	**945.5000**

3.3 Grading - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1468	0.4472	2.6792	4.8000e-004	3.4400e-003	2.4700e-003	5.9200e-003	9.8000e-004	2.2600e-003	3.2300e-003	0.0000	40.5946	40.5946	1.0100e-003	0.0000	40.6158
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0117	0.0172	0.1784	3.5000e-004	0.0288	2.6000e-004	0.0291	7.6500e-003	2.4000e-004	7.8900e-003	0.0000	27.9474	27.9474	1.5800e-003	0.0000	27.9806
Total	**0.1586**	**0.4644**	**2.8576**	**8.3000e-004**	**0.0322**	**2.7300e-003**	**0.0350**	**8.6300e-003**	**2.5000e-003**	**0.0111**	**0.0000**	**68.5420**	**68.5420**	**2.5900e-003**	**0.0000**	**68.5964**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2687	0.0000	0.2687	0.1201	0.0000	0.1201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2916	5.0194	5.8278	9.8600e-003		0.2245	0.2245		0.2207	0.2207	0.0000	939.6081	939.6081	0.2805	0.0000	945.4989
Total	**0.2916**	**5.0194**	**5.8278**	**9.8600e-003**	**0.2687**	**0.2245**	**0.4932**	**0.1201**	**0.2207**	**0.3408**	**0.0000**	**939.6081**	**939.6081**	**0.2805**	**0.0000**	**945.4989**

3.3 Grading - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.1468	0.4472	2.6792	4.8000e-004	3.4400e-003	2.4700e-003	5.9200e-003	9.8000e-004	2.2600e-003	3.2300e-003	0.0000	40.5946	40.5946	1.0100e-003	0.0000	40.6158
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0117	0.0172	0.1784	3.5000e-004	0.0288	2.6000e-004	0.0291	7.6500e-003	2.4000e-004	7.8900e-003	0.0000	27.9474	27.9474	1.5800e-003	0.0000	27.9806
Total	**0.1586**	**0.4644**	**2.8576**	**8.3000e-004**	**0.0322**	**2.7300e-003**	**0.0350**	**8.6300e-003**	**2.5000e-003**	**0.0111**	**0.0000**	**68.5420**	**68.5420**	**2.5900e-003**	**0.0000**	**68.5964**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0805	0.6607	0.4124	5.9000e-004		0.0466	0.0466		0.0438	0.0438	0.0000	53.6788	53.6788	0.0135	0.0000	53.9616
Total	**0.0805**	**0.6607**	**0.4124**	**5.9000e-004**		**0.0466**	**0.0466**		**0.0438**	**0.0438**	**0.0000**	**53.6788**	**53.6788**	**0.0135**	**0.0000**	**53.9616**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0800e-003	0.0518	0.0633	1.1000e-004	3.1100e-003	8.7000e-004	3.9800e-003	8.9000e-004	8.0000e-004	1.6900e-003	0.0000	10.0843	10.0843	8.0000e-005	0.0000	10.0860
Worker	7.6600e-003	0.0112	0.1166	2.3000e-004	0.0188	1.7000e-004	0.0190	5.0000e-003	1.5000e-004	5.1500e-003	0.0000	18.2696	18.2696	1.0300e-003	0.0000	18.2913
Total	**0.0127**	**0.0630**	**0.1799**	**3.4000e-004**	**0.0219**	**1.0400e-003**	**0.0230**	**5.8900e-003**	**9.5000e-004**	**6.8400e-003**	**0.0000**	**28.3539**	**28.3539**	**1.1100e-003**	**0.0000**	**28.3773**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0805	0.6607	0.4124	5.9000e-004		0.0466	0.0466		0.0438	0.0438	0.0000	53.6787	53.6787	0.0135	0.0000	53.9615
Total	**0.0805**	**0.6607**	**0.4124**	**5.9000e-004**		**0.0466**	**0.0466**		**0.0438**	**0.0438**	**0.0000**	**53.6787**	**53.6787**	**0.0135**	**0.0000**	**53.9615**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0800e-003	0.0518	0.0633	1.1000e-004	3.1100e-003	8.7000e-004	3.9800e-003	8.9000e-004	8.0000e-004	1.6900e-003	0.0000	10.0843	10.0843	8.0000e-005	0.0000	10.0860
Worker	7.6600e-003	0.0112	0.1166	2.3000e-004	0.0188	1.7000e-004	0.0190	5.0000e-003	1.5000e-004	5.1500e-003	0.0000	18.2696	18.2696	1.0300e-003	0.0000	18.2913
Total	**0.0127**	**0.0630**	**0.1799**	**3.4000e-004**	**0.0219**	**1.0400e-003**	**0.0230**	**5.8900e-003**	**9.5000e-004**	**6.8400e-003**	**0.0000**	**28.3539**	**28.3539**	**1.1100e-003**	**0.0000**	**28.3773**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0104	316.0104	0.0784	0.0000	317.6563
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0104**	**316.0104**	**0.0784**	**0.0000**	**317.6563**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0266	0.2710	0.3493	6.5000e-004	0.0185	4.2900e-003	0.0228	5.2700e-003	3.9400e-003	9.2100e-003	0.0000	59.1583	59.1583	4.3000e-004	0.0000	59.1673
Worker	0.0409	0.0601	0.6246	1.3700e-003	0.1117	9.5000e-004	0.1126	0.0297	8.7000e-004	0.0305	0.0000	104.6273	104.6273	5.6400e-003	0.0000	104.7457
Total	**0.0676**	**0.3311**	**0.9739**	**2.0200e-003**	**0.1302**	**5.2400e-003**	**0.1354**	**0.0349**	**4.8100e-003**	**0.0397**	**0.0000**	**163.7857**	**163.7857**	**6.0700e-003**	**0.0000**	**163.9130**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0101	316.0101	0.0784	0.0000	317.6560
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0101**	**316.0101**	**0.0784**	**0.0000**	**317.6560**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0266	0.2710	0.3493	6.5000e-004	0.0185	4.2900e-003	0.0228	5.2700e-003	3.9400e-003	9.2100e-003	0.0000	59.1583	59.1583	4.3000e-004	0.0000	59.1673
Worker	0.0409	0.0601	0.6246	1.3700e-003	0.1117	9.5000e-004	0.1126	0.0297	8.7000e-004	0.0305	0.0000	104.6273	104.6273	5.6400e-003	0.0000	104.7457
Total	**0.0676**	**0.3311**	**0.9739**	**2.0200e-003**	**0.1302**	**5.2400e-003**	**0.1354**	**0.0349**	**4.8100e-003**	**0.0397**	**0.0000**	**163.7857**	**163.7857**	**6.0700e-003**	**0.0000**	**163.9130**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0243	0.2455	0.3298	6.5000e-004	0.0184	3.8100e-003	0.0222	5.2500e-003	3.5000e-003	8.7600e-003	0.0000	57.9766	57.9766	4.1000e-004	0.0000	57.9853
Worker	0.0365	0.0540	0.5611	1.3700e-003	0.1113	9.1000e-004	0.1122	0.0296	8.4000e-004	0.0304	0.0000	100.2248	100.2248	5.1800e-003	0.0000	100.3336
Total	**0.0608**	**0.2995**	**0.8909**	**2.0200e-003**	**0.1297**	**4.7200e-003**	**0.1344**	**0.0348**	**4.3400e-003**	**0.0392**	**0.0000**	**158.2014**	**158.2014**	**5.5900e-003**	**0.0000**	**158.3189**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0243	0.2455	0.3298	6.5000e-004	0.0184	3.8100e-003	0.0222	5.2500e-003	3.5000e-003	8.7600e-003	0.0000	57.9766	57.9766	4.1000e-004	0.0000	57.9853
Worker	0.0365	0.0540	0.5611	1.3700e-003	0.1113	9.1000e-004	0.1122	0.0296	8.4000e-004	0.0304	0.0000	100.2248	100.2248	5.1800e-003	0.0000	100.3336
Total	**0.0608**	**0.2995**	**0.8909**	**2.0200e-003**	**0.1297**	**4.7200e-003**	**0.1344**	**0.0348**	**4.3400e-003**	**0.0392**	**0.0000**	**158.2014**	**158.2014**	**5.5900e-003**	**0.0000**	**158.3189**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1801	1.5701	1.1835	1.8100e-003		0.1009	0.1009		0.0948	0.0948	0.0000	159.8195	159.8195	0.0391	0.0000	160.6409
Total	**0.1801**	**1.5701**	**1.1835**	**1.8100e-003**		**0.1009**	**0.1009**		**0.0948**	**0.0948**	**0.0000**	**159.8195**	**159.8195**	**0.0391**	**0.0000**	**160.6409**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0118	0.1169	0.1640	3.4000e-004	9.5600e-003	1.8600e-003	0.0114	2.7300e-003	1.7100e-003	4.4400e-003	0.0000	29.5979	29.5979	2.1000e-004	0.0000	29.6024
Worker	0.0170	0.0255	0.2638	7.1000e-004	0.0578	4.6000e-004	0.0582	0.0153	4.3000e-004	0.0158	0.0000	50.0974	50.0974	2.5000e-003	0.0000	50.1499
Total	**0.0288**	**0.1424**	**0.4278**	**1.0500e-003**	**0.0673**	**2.3200e-003**	**0.0696**	**0.0181**	**2.1400e-003**	**0.0202**	**0.0000**	**79.6953**	**79.6953**	**2.7100e-003**	**0.0000**	**79.7522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1801	1.5701	1.1835	1.8100e-003		0.1009	0.1009		0.0948	0.0948	0.0000	159.8193	159.8193	0.0391	0.0000	160.6407
Total	**0.1801**	**1.5701**	**1.1835**	**1.8100e-003**		**0.1009**	**0.1009**		**0.0948**	**0.0948**	**0.0000**	**159.8193**	**159.8193**	**0.0391**	**0.0000**	**160.6407**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0118	0.1169	0.1640	3.4000e-004	9.5600e-003	1.8600e-003	0.0114	2.7300e-003	1.7100e-003	4.4400e-003	0.0000	29.5979	29.5979	2.1000e-004	0.0000	29.6024
Worker	0.0170	0.0255	0.2638	7.1000e-004	0.0578	4.6000e-004	0.0582	0.0153	4.3000e-004	0.0158	0.0000	50.0974	50.0974	2.5000e-003	0.0000	50.1499
Total	**0.0288**	**0.1424**	**0.4278**	**1.0500e-003**	**0.0673**	**2.3200e-003**	**0.0696**	**0.0181**	**2.1400e-003**	**0.0202**	**0.0000**	**79.6953**	**79.6953**	**2.7100e-003**	**0.0000**	**79.7522**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9500e-003	0.0566	0.0418	7.0000e-005		4.8600e-003	4.8600e-003		4.8600e-003	4.8600e-003	0.0000	5.6172	5.6172	7.3000e-004	0.0000	5.6325
Total	**0.1054**	**0.0566**	**0.0418**	**7.0000e-005**		**4.8600e-003**	**4.8600e-003**		**4.8600e-003**	**4.8600e-003**	**0.0000**	**5.6172**	**5.6172**	**7.3000e-004**	**0.0000**	**5.6325**

3.5 Architectural Coating - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	2.3000e-003	0.0239	5.0000e-005	3.8600e-003	3.0000e-005	3.9000e-003	1.0300e-003	3.0000e-005	1.0600e-003	0.0000	3.7476	3.7476	2.1000e-004	0.0000	3.7521
Total	**1.5700e-003**	**2.3000e-003**	**0.0239**	**5.0000e-005**	**3.8600e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**3.0000e-005**	**1.0600e-003**	**0.0000**	**3.7476**	**3.7476**	**2.1000e-004**	**0.0000**	**3.7521**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9500e-003	0.0566	0.0418	7.0000e-005		4.8600e-003	4.8600e-003		4.8600e-003	4.8600e-003	0.0000	5.6172	5.6172	7.3000e-004	0.0000	5.6325
Total	**0.1054**	**0.0566**	**0.0418**	**7.0000e-005**		**4.8600e-003**	**4.8600e-003**		**4.8600e-003**	**4.8600e-003**	**0.0000**	**5.6172**	**5.6172**	**7.3000e-004**	**0.0000**	**5.6325**

3.5 Architectural Coating - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5700e-003	2.3000e-003	0.0239	5.0000e-005	3.8600e-003	3.0000e-005	3.9000e-003	1.0300e-003	3.0000e-005	1.0600e-003	0.0000	3.7476	3.7476	2.1000e-004	0.0000	3.7521
Total	**1.5700e-003**	**2.3000e-003**	**0.0239**	**5.0000e-005**	**3.8600e-003**	**3.0000e-005**	**3.9000e-003**	**1.0300e-003**	**3.0000e-005**	**1.0600e-003**	**0.0000**	**3.7476**	**3.7476**	**2.1000e-004**	**0.0000**	**3.7521**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5722					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0481	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3200	33.3200	3.9300e-003	0.0000	33.4025
Total	**0.6203**	**0.3096**	**0.2459**	**3.9000e-004**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**33.3200**	**33.3200**	**3.9300e-003**	**0.0000**	**33.4025**

3.5 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3900e-003	0.0123	0.1281	2.8000e-004	0.0229	2.0000e-004	0.0231	6.0800e-003	1.8000e-004	6.2600e-003	0.0000	21.4620	21.4620	1.1600e-003	0.0000	21.4863
Total	**8.3900e-003**	**0.0123**	**0.1281**	**2.8000e-004**	**0.0229**	**2.0000e-004**	**0.0231**	**6.0800e-003**	**1.8000e-004**	**6.2600e-003**	**0.0000**	**21.4620**	**21.4620**	**1.1600e-003**	**0.0000**	**21.4863**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5722					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0481	0.3096	0.2459	3.9000e-004		0.0257	0.0257		0.0257	0.0257	0.0000	33.3199	33.3199	3.9300e-003	0.0000	33.4024
Total	**0.6203**	**0.3096**	**0.2459**	**3.9000e-004**		**0.0257**	**0.0257**		**0.0257**	**0.0257**	**0.0000**	**33.3199**	**33.3199**	**3.9300e-003**	**0.0000**	**33.4024**

3.5 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3900e-003	0.0123	0.1281	2.8000e-004	0.0229	2.0000e-004	0.0231	6.0800e-003	1.8000e-004	6.2600e-003	0.0000	21.4620	21.4620	1.1600e-003	0.0000	21.4863
Total	**8.3900e-003**	**0.0123**	**0.1281**	**2.8000e-004**	**0.0229**	**2.0000e-004**	**0.0231**	**6.0800e-003**	**1.8000e-004**	**6.2600e-003**	**0.0000**	**21.4620**	**21.4620**	**1.1600e-003**	**0.0000**	**21.4863**

3.5 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5700					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0432	0.2841	0.2429	3.9000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total	**0.6132**	**0.2841**	**0.2429**	**3.9000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

3.5 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4900e-003	0.0111	0.1151	2.8000e-004	0.0228	1.9000e-004	0.0230	6.0600e-003	1.7000e-004	6.2300e-003	0.0000	20.5589	20.5589	1.0600e-003	0.0000	20.5813
Total	**7.4900e-003**	**0.0111**	**0.1151**	**2.8000e-004**	**0.0228**	**1.9000e-004**	**0.0230**	**6.0600e-003**	**1.7000e-004**	**6.2300e-003**	**0.0000**	**20.5589**	**20.5589**	**1.0600e-003**	**0.0000**	**20.5813**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5700					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0432	0.2841	0.2429	3.9000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total	**0.6132**	**0.2841**	**0.2429**	**3.9000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

3.5 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4900e-003	0.0111	0.1151	2.8000e-004	0.0228	1.9000e-004	0.0230	6.0600e-003	1.7000e-004	6.2300e-003	0.0000	20.5589	20.5589	1.0600e-003	0.0000	20.5813
Total	**7.4900e-003**	**0.0111**	**0.1151**	**2.8000e-004**	**0.0228**	**1.9000e-004**	**0.0230**	**6.0600e-003**	**1.7000e-004**	**6.2300e-003**	**0.0000**	**20.5589**	**20.5589**	**1.0600e-003**	**0.0000**	**20.5813**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2960					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0202	0.1354	0.1252	2.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	17.2345	17.2345	1.6400e-003	0.0000	17.2689
Total	**0.3161**	**0.1354**	**0.1252**	**2.0000e-004**		**0.0102**	**0.0102**		**0.0102**	**0.0102**	**0.0000**	**17.2345**	**17.2345**	**1.6400e-003**	**0.0000**	**17.2689**

3.5 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	5.2200e-003	0.0541	1.5000e-004	0.0119	9.0000e-005	0.0119	3.1500e-003	9.0000e-005	3.2300e-003	0.0000	10.2764	10.2764	5.1000e-004	0.0000	10.2872
Total	**3.4900e-003**	**5.2200e-003**	**0.0541**	**1.5000e-004**	**0.0119**	**9.0000e-005**	**0.0119**	**3.1500e-003**	**9.0000e-005**	**3.2300e-003**	**0.0000**	**10.2764**	**10.2764**	**5.1000e-004**	**0.0000**	**10.2872**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2960					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0202	0.1354	0.1252	2.0000e-004		0.0102	0.0102		0.0102	0.0102	0.0000	17.2345	17.2345	1.6400e-003	0.0000	17.2689
Total	**0.3161**	**0.1354**	**0.1252**	**2.0000e-004**		**0.0102**	**0.0102**		**0.0102**	**0.0102**	**0.0000**	**17.2345**	**17.2345**	**1.6400e-003**	**0.0000**	**17.2689**

3.5 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4900e-003	5.2200e-003	0.0541	1.5000e-004	0.0119	9.0000e-005	0.0119	3.1500e-003	9.0000e-005	3.2300e-003	0.0000	10.2764	10.2764	5.1000e-004	0.0000	10.2872
Total	**3.4900e-003**	**5.2200e-003**	**0.0541**	**1.5000e-004**	**0.0119**	**9.0000e-005**	**0.0119**	**3.1500e-003**	**9.0000e-005**	**3.2300e-003**	**0.0000**	**10.2764**	**10.2764**	**5.1000e-004**	**0.0000**	**10.2872**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0121	0.1287	0.1087	1.7000e-004		7.0400e-003	7.0400e-003		6.4800e-003	6.4800e-003	0.0000	15.2766	15.2766	4.7600e-003	0.0000	15.3764
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0121**	**0.1287**	**0.1087**	**1.7000e-004**		**7.0400e-003**	**7.0400e-003**		**6.4800e-003**	**6.4800e-003**	**0.0000**	**15.2766**	**15.2766**	**4.7600e-003**	**0.0000**	**15.3764**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	5.4000e-004	5.6400e-003	2.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0705	1.0705	5.0000e-005	0.0000	1.0716
Total	**3.6000e-004**	**5.4000e-004**	**5.6400e-003**	**2.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0705**	**1.0705**	**5.0000e-005**	**0.0000**	**1.0716**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0121	0.1287	0.1087	1.7000e-004		7.0400e-003	7.0400e-003		6.4800e-003	6.4800e-003	0.0000	15.2765	15.2765	4.7600e-003	0.0000	15.3764
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0121**	**0.1287**	**0.1087**	**1.7000e-004**		**7.0400e-003**	**7.0400e-003**		**6.4800e-003**	**6.4800e-003**	**0.0000**	**15.2765**	**15.2765**	**4.7600e-003**	**0.0000**	**15.3764**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	5.4000e-004	5.6400e-003	2.0000e-005	1.2300e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0705	1.0705	5.0000e-005	0.0000	1.0716
Total	**3.6000e-004**	**5.4000e-004**	**5.6400e-003**	**2.0000e-005**	**1.2300e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0705**	**1.0705**	**5.0000e-005**	**0.0000**	**1.0716**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2209	3.9081	14.5599	0.0394	2.6903	0.0564	2.7467	0.7199	0.0519	0.7719	0.0000	2,957.1890	2,957.1890	0.1111	0.0000	2,959.5212
Unmitigated	1.2209	3.9081	14.5599	0.0394	2.6903	0.0564	2.7467	0.7199	0.0519	0.7719	0.0000	2,957.1890	2,957.1890	0.1111	0.0000	2,959.5212

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,086.26	2,197.44	1911.86	7,098,206	7,098,206
Total	2,086.26	2,197.44	1,911.86	7,098,206	7,098,206

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.511172	0.060004	0.180590	0.138995	0.042398	0.006681	0.016070	0.032568	0.001938	0.002493	0.004370	0.000586	0.002135

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	442.2847	442.2847	0.0203	4.2100e-003	444.0156
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	442.2847	442.2847	0.0203	4.2100e-003	444.0156
NaturalGas Mitigated	0.0340	0.2901	0.1235	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	336.0107	336.0107	6.4400e-003	6.1600e-003	338.0556
NaturalGas Unmitigated	0.0340	0.2901	0.1235	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	336.0107	336.0107	6.4400e-003	6.1600e-003	338.0556

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.2966e+006	0.0340	0.2901	0.1235	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	336.0107	336.0107	6.4400e-003	6.1600e-003	338.0556
Total		**0.0340**	**0.2901**	**0.1235**	**1.8500e-003**		**0.0235**	**0.0235**		**0.0235**	**0.0235**	**0.0000**	**336.0107**	**336.0107**	**6.4400e-003**	**6.1600e-003**	**338.0556**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.2966e+006	0.0340	0.2901	0.1235	1.8500e-003		0.0235	0.0235		0.0235	0.0235	0.0000	336.0107	336.0107	6.4400e-003	6.1600e-003	338.0556
Total		**0.0340**	**0.2901**	**0.1235**	**1.8500e-003**		**0.0235**	**0.0235**		**0.0235**	**0.0235**	**0.0000**	**336.0107**	**336.0107**	**6.4400e-003**	**6.1600e-003**	**338.0556**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.54555e+006	442.2847	0.0203	4.2100e-003	444.0156
Total		**442.2847**	**0.0203**	**4.2100e-003**	**444.0156**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.54555e +006	442.2847	0.0203	4.2100e-003	444.0156
Total		**442.2847**	**0.0203**	**4.2100e-003**	**444.0156**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6460	0.0263	2.2643	1.2000e-004		0.0157	0.0157		0.0156	0.0156	0.0000	50.7872	50.7872	4.5400e-003	8.6000e-004	51.1504
Unmitigated	2.3552	0.0444	3.6338	2.3000e-003		0.2205	0.2205		0.2205	0.2205	23.1558	48.1697	71.3255	0.0727	1.5700e-003	73.3393

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1535					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4179					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.7141	0.0181	1.3697	2.1800e-003		0.2082	0.2082		0.2081	0.2081	23.1558	44.4974	67.6532	0.0691	1.5700e-003	69.5905
Landscaping	0.0698	0.0263	2.2641	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.6723	3.6723	3.6400e-003	0.0000	3.7488
Total	**2.3552**	**0.0444**	**3.6338**	**2.3000e-003**		**0.2205**	**0.2205**		**0.2205**	**0.2205**	**23.1558**	**48.1697**	**71.3255**	**0.0727**	**1.5700e-003**	**73.3393**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1535					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4179					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.7600e-003	0.0000	2.6000e-004	0.0000		3.2900e-003	3.2900e-003		3.2500e-003	3.2500e-003	0.0000	47.1149	47.1149	9.0000e-004	8.6000e-004	47.4016
Landscaping	0.0698	0.0263	2.2641	1.2000e-004		0.0124	0.0124		0.0124	0.0124	0.0000	3.6723	3.6723	3.6400e-003	0.0000	3.7488
Total	**1.6460**	**0.0263**	**2.2643**	**1.2000e-004**		**0.0157**	**0.0157**		**0.0156**	**0.0156**	**0.0000**	**50.7872**	**50.7872**	**4.5400e-003**	**8.6000e-004**	**51.1504**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	85.9002	0.4665	0.0117	99.3186
Unmitigated	85.9002	0.4666	0.0117	99.3258

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	14.2036 / 8.95443	85.9002	0.4666	0.0117	99.3258
Total		**85.9002**	**0.4666**	**0.0117**	**99.3258**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	14.2036 / 8.95443	85.9002	0.4665	0.0117	99.3186
Total		**85.9002**	**0.4665**	**0.0117**	**99.3186**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	51.8500	3.0643	0.0000	116.1992
Unmitigated	51.8500	3.0643	0.0000	116.1992

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	255.43	51.8500	3.0643	0.0000	116.1992
Total		**51.8500**	**3.0643**	**0.0000**	**116.1992**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	255.43	51.8500	3.0643	0.0000	116.1992
Total		**51.8500**	**3.0643**	**0.0000**	**116.1992**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Option 1 Phase 2

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	160.00	Dwelling Unit	51.95	288,000.00	458

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Construction: 2 years, Paving 3 weeks

Off-road Equipment - Construction: 1 crane, 3 forklifts, 1 gen set, 3 loader/backhoes, 1 loader

Off-road Equipment - Paving: 2 pavers, 2 paving equipment, 2 rollers

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	75.00	500.00
tblConstructionPhase	NumDays	1,110.00	500.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	PhaseEndDate	10/29/2021	11/29/2019
tblConstructionPhase	PhaseEndDate	12/20/2019	1/21/2020
tblConstructionPhase	PhaseStartDate	11/30/2019	1/1/2018
tblConstructionPhase	PhaseStartDate	11/30/2019	1/1/2020
tblProjectCharacteristics	OperationalYear	2014	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.0188	3.5027	3.1673	5.5500e-003	0.1139	0.2179	0.3319	0.0305	0.2060	0.2365	0.0000	467.9956	467.9956	0.0829	0.0000	469.7368
2019	0.8886	2.8990	2.8143	5.0900e-003	0.1043	0.1718	0.2761	0.0280	0.1624	0.1903	0.0000	422.4594	422.4594	0.0743	0.0000	424.0191
2020	0.0103	0.1038	0.1120	1.8000e-004	1.2400e-003	5.5500e-003	6.7900e-003	3.3000e-004	5.1100e-003	5.4400e-003	0.0000	15.6594	15.6594	4.8000e-003	0.0000	15.7602
Total	**1.9176**	**6.5055**	**6.0936**	**0.0108**	**0.2195**	**0.3952**	**0.6148**	**0.0588**	**0.3735**	**0.4323**	**0.0000**	**906.1144**	**906.1144**	**0.1620**	**0.0000**	**909.5161**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.0188	3.5027	3.1673	5.5500e-003	0.1139	0.2179	0.3319	0.0305	0.2060	0.2365	0.0000	467.9952	467.9952	0.0829	0.0000	469.7364
2019	0.8886	2.8990	2.8143	5.0900e-003	0.1043	0.1718	0.2761	0.0280	0.1624	0.1903	0.0000	422.4590	422.4590	0.0743	0.0000	424.0187
2020	0.0103	0.1038	0.1120	1.8000e-004	1.2400e-003	5.5500e-003	6.7900e-003	3.3000e-004	5.1100e-003	5.4400e-003	0.0000	15.6594	15.6594	4.8000e-003	0.0000	15.7602
Total	**1.9176**	**6.5055**	**6.0936**	**0.0108**	**0.2195**	**0.3952**	**0.6148**	**0.0588**	**0.3735**	**0.4323**	**0.0000**	**906.1136**	**906.1136**	**0.1620**	**0.0000**	**909.5153**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7278	0.0324	2.6608	1.6900e-003		0.1619	0.1619		0.1619	0.1619	16.9951	35.3539	52.3490	0.0533	1.1500e-003	53.8261
Energy	0.0249	0.2130	0.0906	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	571.2260	571.2260	0.0197	7.6100e-003	573.9972
Mobile	0.7233	1.8047	8.2757	0.0272	1.9684	0.0279	1.9962	0.5260	0.0257	0.5517	0.0000	1,878.1323	1,878.1323	0.0683	0.0000	1,879.5669
Waste						0.0000	0.0000		0.0000	0.0000	38.1176	0.0000	38.1176	2.2527	0.0000	85.4241
Water						0.0000	0.0000		0.0000	0.0000	3.3073	59.7387	63.0460	0.3424	8.5900e-003	72.8996
Total	**2.4760**	**2.0501**	**11.0271**	**0.0302**	**1.9684**	**0.2070**	**2.1753**	**0.5260**	**0.2048**	**0.7308**	**58.4200**	**2,544.4510**	**2,602.8709**	**2.7364**	**0.0174**	**2,665.7139**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2072	0.0192	1.6557	9.0000e-005		0.0115	0.0115		0.0115	0.0115	0.0000	37.2750	37.2750	3.2900e-003	6.3000e-004	37.5407
Energy	0.0249	0.2130	0.0906	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	571.2260	571.2260	0.0197	7.6100e-003	573.9972
Mobile	0.7233	1.8047	8.2757	0.0272	1.9684	0.0279	1.9962	0.5260	0.0257	0.5517	0.0000	1,878.1323	1,878.1323	0.0683	0.0000	1,879.5669
Waste						0.0000	0.0000		0.0000	0.0000	38.1176	0.0000	38.1176	2.2527	0.0000	85.4241
Water						0.0000	0.0000		0.0000	0.0000	3.3073	59.7387	63.0460	0.3424	8.5800e-003	72.8944
Total	**1.9554**	**2.0368**	**10.0220**	**0.0286**	**1.9684**	**0.0566**	**2.0250**	**0.5260**	**0.0544**	**0.5804**	**41.4249**	**2,546.3721**	**2,587.7970**	**2.6863**	**0.0168**	**2,649.4232**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**21.03**	**0.65**	**9.11**	**5.30**	**0.00**	**72.65**	**6.91**	**0.00**	**73.43**	**20.58**	**29.09**	**-0.08**	**0.58**	**1.83**	**3.05**	**0.61**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2018	11/29/2019	5	500	
2	Architectural Coating	Architectural Coating	1/1/2018	11/29/2019	5	500	
3	Paving	Paving	1/1/2020	1/21/2020	5	15	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 583,200; Residential Outdoor: 194,400; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	58.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9844	308.9844	0.0756	0.0000	310.5723
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9844**	**308.9844**	**0.0756**	**0.0000**	**310.5723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0178	0.1671	0.2364	4.8000e-004	0.0137	2.5700e-003	0.0162	3.9000e-003	2.3600e-003	6.2600e-003	0.0000	42.0553	42.0553	3.0000e-004	0.0000	42.0617
Worker	0.0214	0.0317	0.3322	9.9000e-004	0.0831	5.7000e-004	0.0837	0.0221	5.3000e-004	0.0226	0.0000	69.2983	69.2983	3.1700e-003	0.0000	69.3649
Total	**0.0392**	**0.1988**	**0.5686**	**1.4700e-003**	**0.0968**	**3.1400e-003**	**0.0999**	**0.0260**	**2.8900e-003**	**0.0289**	**0.0000**	**111.3536**	**111.3536**	**3.4700e-003**	**0.0000**	**111.4266**

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0178	0.1671	0.2364	4.8000e-004	0.0137	2.5700e-003	0.0162	3.9000e-003	2.3600e-003	6.2600e-003	0.0000	42.0553	42.0553	3.0000e-004	0.0000	42.0617
Worker	0.0214	0.0317	0.3322	9.9000e-004	0.0831	5.7000e-004	0.0837	0.0221	5.3000e-004	0.0226	0.0000	69.2983	69.2983	3.1700e-003	0.0000	69.3649
Total	**0.0392**	**0.1988**	**0.5686**	**1.4700e-003**	**0.0968**	**3.1400e-003**	**0.0999**	**0.0260**	**2.8900e-003**	**0.0289**	**0.0000**	**111.3536**	**111.3536**	**3.4700e-003**	**0.0000**	**111.4266**

3.2 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2810	2.5053	2.0459	3.2000e-003		0.1536	0.1536		0.1444	0.1444	0.0000	279.7767	279.7767	0.0681	0.0000	281.2062
Total	**0.2810**	**2.5053**	**2.0459**	**3.2000e-003**		**0.1536**	**0.1536**		**0.1444**	**0.1444**	**0.0000**	**279.7767**	**279.7767**	**0.0681**	**0.0000**	**281.2062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0153	0.1418	0.2064	4.4000e-004	0.0125	2.1900e-003	0.0147	3.5700e-003	2.0200e-003	5.5900e-003	0.0000	37.9752	37.9752	2.8000e-004	0.0000	37.9810
Worker	0.0183	0.0269	0.2834	9.1000e-004	0.0761	5.3000e-004	0.0766	0.0202	4.9000e-004	0.0207	0.0000	61.4768	61.4768	2.7700e-003	0.0000	61.5350
Total	**0.0336**	**0.1688**	**0.4898**	**1.3500e-003**	**0.0886**	**2.7200e-003**	**0.0913**	**0.0238**	**2.5100e-003**	**0.0263**	**0.0000**	**99.4519**	**99.4519**	**3.0500e-003**	**0.0000**	**99.5160**

3.2 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2810	2.5053	2.0459	3.2000e-003		0.1536	0.1536		0.1444	0.1444	0.0000	279.7764	279.7764	0.0681	0.0000	281.2059
Total	**0.2810**	**2.5053**	**2.0459**	**3.2000e-003**		**0.1536**	**0.1536**		**0.1444**	**0.1444**	**0.0000**	**279.7764**	**279.7764**	**0.0681**	**0.0000**	**281.2059**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0153	0.1418	0.2064	4.4000e-004	0.0125	2.1900e-003	0.0147	3.5700e-003	2.0200e-003	5.5900e-003	0.0000	37.9752	37.9752	2.8000e-004	0.0000	37.9810
Worker	0.0183	0.0269	0.2834	9.1000e-004	0.0761	5.3000e-004	0.0766	0.0202	4.9000e-004	0.0207	0.0000	61.4768	61.4768	2.7700e-003	0.0000	61.5350
Total	**0.0336**	**0.1688**	**0.4898**	**1.3500e-003**	**0.0886**	**2.7200e-003**	**0.0913**	**0.0238**	**2.5100e-003**	**0.0263**	**0.0000**	**99.4519**	**99.4519**	**3.0500e-003**	**0.0000**	**99.5160**

3.3 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0390	0.2618	0.2420	3.9000e-004		0.0197	0.0197		0.0197	0.0197	0.0000	33.3200	33.3200	3.1700e-003	0.0000	33.3865
Total	**0.6269**	**0.2618**	**0.2420**	**3.9000e-004**		**0.0197**	**0.0197**		**0.0197**	**0.0197**	**0.0000**	**33.3200**	**33.3200**	**3.1700e-003**	**0.0000**	**33.3865**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4300e-003	6.5700e-003	0.0687	2.0000e-004	0.0172	1.2000e-004	0.0173	4.5700e-003	1.1000e-004	4.6700e-003	0.0000	14.3376	14.3376	6.6000e-004	0.0000	14.3514
Total	**4.4300e-003**	**6.5700e-003**	**0.0687**	**2.0000e-004**	**0.0172**	**1.2000e-004**	**0.0173**	**4.5700e-003**	**1.1000e-004**	**4.6700e-003**	**0.0000**	**14.3376**	**14.3376**	**6.6000e-004**	**0.0000**	**14.3514**

3.3 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5879					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0390	0.2618	0.2420	3.9000e-004		0.0197	0.0197		0.0197	0.0197	0.0000	33.3200	33.3200	3.1700e-003	0.0000	33.3865
Total	**0.6269**	**0.2618**	**0.2420**	**3.9000e-004**		**0.0197**	**0.0197**		**0.0197**	**0.0197**	**0.0000**	**33.3200**	**33.3200**	**3.1700e-003**	**0.0000**	**33.3865**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4300e-003	6.5700e-003	0.0687	2.0000e-004	0.0172	1.2000e-004	0.0173	4.5700e-003	1.1000e-004	4.6700e-003	0.0000	14.3376	14.3376	6.6000e-004	0.0000	14.3514
Total	**4.4300e-003**	**6.5700e-003**	**0.0687**	**2.0000e-004**	**0.0172**	**1.2000e-004**	**0.0173**	**4.5700e-003**	**1.1000e-004**	**4.6700e-003**	**0.0000**	**14.3376**	**14.3376**	**6.6000e-004**	**0.0000**	**14.3514**

3.3 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5384					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0318	0.2193	0.2200	3.6000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	30.5114	30.5114	2.5800e-003	0.0000	30.5655
Total	**0.5702**	**0.2193**	**0.2200**	**3.6000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**	**0.0000**	**30.5114**	**30.5114**	**2.5800e-003**	**0.0000**	**30.5655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	5.5700e-003	0.0586	1.9000e-004	0.0157	1.1000e-004	0.0159	4.1800e-003	1.0000e-004	4.2800e-003	0.0000	12.7193	12.7193	5.7000e-004	0.0000	12.7314
Total	**3.7900e-003**	**5.5700e-003**	**0.0586**	**1.9000e-004**	**0.0157**	**1.1000e-004**	**0.0159**	**4.1800e-003**	**1.0000e-004**	**4.2800e-003**	**0.0000**	**12.7193**	**12.7193**	**5.7000e-004**	**0.0000**	**12.7314**

3.3 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5384					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0318	0.2193	0.2200	3.6000e-004		0.0154	0.0154		0.0154	0.0154	0.0000	30.5114	30.5114	2.5800e-003	0.0000	30.5655
Total	**0.5702**	**0.2193**	**0.2200**	**3.6000e-004**		**0.0154**	**0.0154**		**0.0154**	**0.0154**	**0.0000**	**30.5114**	**30.5114**	**2.5800e-003**	**0.0000**	**30.5655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7900e-003	5.5700e-003	0.0586	1.9000e-004	0.0157	1.1000e-004	0.0159	4.1800e-003	1.0000e-004	4.2800e-003	0.0000	12.7193	12.7193	5.7000e-004	0.0000	12.7314
Total	**3.7900e-003**	**5.5700e-003**	**0.0586**	**1.9000e-004**	**0.0157**	**1.1000e-004**	**0.0159**	**4.1800e-003**	**1.0000e-004**	**4.2800e-003**	**0.0000**	**12.7193**	**12.7193**	**5.7000e-004**	**0.0000**	**12.7314**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9800e-003	0.1034	0.1076	1.7000e-004		5.5400e-003	5.5400e-003		5.1000e-003	5.1000e-003	0.0000	14.7015	14.7015	4.7500e-003	0.0000	14.8014
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9800e-003**	**0.1034**	**0.1076**	**1.7000e-004**		**5.5400e-003**	**5.5400e-003**		**5.1000e-003**	**5.1000e-003**	**0.0000**	**14.7015**	**14.7015**	**4.7500e-003**	**0.0000**	**14.8014**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.1000e-004	4.3100e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	0.9579	0.9579	4.0000e-005	0.0000	0.9588
Total	**2.8000e-004**	**4.1000e-004**	**4.3100e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**0.9579**	**0.9579**	**4.0000e-005**	**0.0000**	**0.9588**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9800e-003	0.1034	0.1076	1.7000e-004		5.5400e-003	5.5400e-003		5.1000e-003	5.1000e-003	0.0000	14.7015	14.7015	4.7500e-003	0.0000	14.8014
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.9800e-003**	**0.1034**	**0.1076**	**1.7000e-004**		**5.5400e-003**	**5.5400e-003**		**5.1000e-003**	**5.1000e-003**	**0.0000**	**14.7015**	**14.7015**	**4.7500e-003**	**0.0000**	**14.8014**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.1000e-004	4.3100e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	0.9579	0.9579	4.0000e-005	0.0000	0.9588
Total	**2.8000e-004**	**4.1000e-004**	**4.3100e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**0.9579**	**0.9579**	**4.0000e-005**	**0.0000**	**0.9588**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7233	1.8047	8.2757	0.0272	1.9684	0.0279	1.9962	0.5260	0.0257	0.5517	0.0000	1,878.1323	1,878.1323	0.0683	0.0000	1,879.5669
Unmitigated	0.7233	1.8047	8.2757	0.0272	1.9684	0.0279	1.9962	0.5260	0.0257	0.5517	0.0000	1,878.1323	1,878.1323	0.0683	0.0000	1,879.5669

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,531.20	1,612.80	1403.20	5,209,692	5,209,692
Total	1,531.20	1,612.80	1,403.20	5,209,692	5,209,692

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.508857	0.056420	0.193204	0.150829	0.041936	0.005921	0.015893	0.015805	0.001454	0.002159	0.004747	0.000498	0.002277

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.6126	324.6126	0.0149	3.0900e-003	325.8830
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	324.6126	324.6126	0.0149	3.0900e-003	325.8830
NaturalGas Mitigated	0.0249	0.2130	0.0906	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.6134	246.6134	4.7300e-003	4.5200e-003	248.1142
NaturalGas Unmitigated	0.0249	0.2130	0.0906	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.6134	246.6134	4.7300e-003	4.5200e-003	248.1142

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.62136e+006	0.0249	0.2130	0.0906	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.6134	246.6134	4.7300e-003	4.5200e-003	248.1142
Total		**0.0249**	**0.2130**	**0.0906**	**1.3600e-003**		**0.0172**	**0.0172**		**0.0172**	**0.0172**	**0.0000**	**246.6134**	**246.6134**	**4.7300e-003**	**4.5200e-003**	**248.1142**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	4.62136e+006	0.0249	0.2130	0.0906	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.6134	246.6134	4.7300e-003	4.5200e-003	248.1142
Total		**0.0249**	**0.2130**	**0.0906**	**1.3600e-003**		**0.0172**	**0.0172**		**0.0172**	**0.0172**	**0.0000**	**246.6134**	**246.6134**	**4.7300e-003**	**4.5200e-003**	**248.1142**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.13435e+006	324.6126	0.0149	3.0900e-003	325.8830
Total		**324.6126**	**0.0149**	**3.0900e-003**	**325.8830**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.13435e+006	324.6126	0.0149	3.0900e-003	325.8830
Total		**324.6126**	**0.0149**	**3.0900e-003**	**325.8830**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.2072	0.0192	1.6557	9.0000e-005		0.0115	0.0115		0.0115	0.0115	0.0000	37.2750	37.2750	3.2900e-003	6.3000e-004	37.5407
Unmitigated	1.7278	0.0324	2.6608	1.6900e-003		0.1619	0.1619		0.1619	0.1619	16.9951	35.3539	52.3490	0.0533	1.1500e-003	53.8261

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5241	0.0133	1.0053	1.6000e-003		0.1528	0.1528		0.1528	0.1528	16.9951	32.6587	49.6537	0.0507	1.1500e-003	51.0756
Landscaping	0.0504	0.0192	1.6555	9.0000e-005		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003	0.0000	2.6953	2.6953	2.6300e-003	0.0000	2.7505
Total	**1.7278**	**0.0325**	**2.6608**	**1.6900e-003**		**0.1619**	**0.1619**		**0.1619**	**0.1619**	**16.9951**	**35.3539**	**52.3490**	**0.0533**	**1.1500e-003**	**53.8261**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1126					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0407					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0000	1.9000e-004	0.0000		2.4100e-003	2.4100e-003		2.3900e-003	2.3900e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7902
Landscaping	0.0504	0.0192	1.6555	9.0000e-005		9.1000e-003	9.1000e-003		9.1000e-003	9.1000e-003	0.0000	2.6953	2.6953	2.6300e-003	0.0000	2.7505
Total	**1.2072**	**0.0192**	**1.6557**	**9.0000e-005**		**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**37.2750**	**37.2750**	**3.2900e-003**	**6.3000e-004**	**37.5407**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	63.0460	0.3424	8.5800e-003	72.8944
Unmitigated	63.0460	0.3424	8.5900e-003	72.8996

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.4246 / 6.57206	63.0460	0.3424	8.5900e-003	72.8996
Total		**63.0460**	**0.3424**	**8.5900e-003**	**72.8996**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.4246 / 6.57206	63.0460	0.3424	8.5800e-003	72.8944
Total		**63.0460**	**0.3424**	**8.5800e-003**	**72.8944**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	38.1176	2.2527	0.0000	85.4241
Unmitigated	38.1176	2.2527	0.0000	85.4241

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	187.78	38.1176	2.2527	0.0000	85.4241
Total		**38.1176**	**2.2527**	**0.0000**	**85.4241**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	187.78	38.1176	2.2527	0.0000	85.4241
Total		**38.1176**	**2.2527**	**0.0000**	**85.4241**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Esperanza Hills Operational Build Out

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	378.00	Dwelling Unit	122.73	680,400.00	1081

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operational Only

Off-road Equipment -

Off-road Equipment - Operational emissions only

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.7523	3.7015	10.6564	0.0271	1.7702	0.0593	1.8295	0.4744	0.0546	0.5290	0.0000	2,336.7084	2,336.7084	0.0733	0.0000	2,338.2478
Total	**0.7523**	**3.7015**	**10.6564**	**0.0271**	**1.7702**	**0.0593**	**1.8295**	**0.4744**	**0.0546**	**0.5290**	**0.0000**	**2,336.7084**	**2,336.7084**	**0.0733**	**0.0000**	**2,338.2478**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.7523	3.7015	10.6564	0.0271	1.7702	0.0593	1.8295	0.4744	0.0546	0.5290	0.0000	2,336.7084	2,336.7084	0.0733	0.0000	2,338.2478
Total	**0.7523**	**3.7015**	**10.6564**	**0.0271**	**1.7702**	**0.0593**	**1.8295**	**0.4744**	**0.0546**	**0.5290**	**0.0000**	**2,336.7084**	**2,336.7084**	**0.0733**	**0.0000**	**2,338.2478**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	114.9323	2.8750	221.2878	0.3039		29.0468	29.0468		29.0423	29.0423	3,540.6952	6,860.1528	10,400.8479	10.6138	0.2403	10,698.2359
Energy	0.3226	2.7566	1.1730	0.0176		0.2229	0.2229		0.2229	0.2229		3,519.0856	3,519.0856	0.0675	0.0645	3,540.5021
Mobile	9.9853	23.0184	114.2580	0.3859	27.5155	0.3825	27.8980	7.3422	0.3531	7.6953		29,382.6294	29,382.6294	1.0350		29,404.3640
Total	**125.2402**	**28.6500**	**336.7188**	**0.7074**	**27.5155**	**29.6522**	**57.1677**	**7.3422**	**29.6183**	**36.9605**	**3,540.6952**	**39,761.8678**	**43,302.5630**	**11.7162**	**0.3048**	**43,643.1021**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	16.5431	0.3619	31.3252	1.6500e-003		0.6283	0.6283		0.6235	0.6235	0.0000	7,260.3881	7,260.3881	0.1928	0.1321	7,305.3817
Energy	0.3226	2.7566	1.1730	0.0176		0.2229	0.2229		0.2229	0.2229		3,519.0856	3,519.0856	0.0675	0.0645	3,540.5021
Mobile	9.9853	23.0184	114.2580	0.3859	27.5155	0.3825	27.8980	7.3422	0.3531	7.6953		29,382.6294	29,382.6294	1.0350		29,404.3640
Total	**26.8510**	**26.1370**	**146.7562**	**0.4051**	**27.5155**	**1.2337**	**28.7492**	**7.3422**	**1.1995**	**8.5417**	**0.0000**	**40,162.1031**	**40,162.1031**	**1.2953**	**0.1966**	**40,250.2479**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	78.56	8.77	56.42	42.73	0.00	95.84	49.71	0.00	95.95	76.89	100.00	-1.01	7.25	88.94	35.51	7.77

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	6/1/2017	6/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	136.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3227	3.1479	3.8463	8.6400e-003	0.2500	0.0490	0.2990	0.0712	0.0450	0.1162		853.3168	853.3168	5.9600e-003		853.4421
Worker	0.4296	0.5535	6.8101	0.0185	1.5202	0.0104	1.5305	0.4032	9.5900e-003	0.4128		1,483.3916	1,483.3916	0.0673		1,484.8057
Total	**0.7523**	**3.7015**	**10.6564**	**0.0271**	**1.7702**	**0.0593**	**1.8295**	**0.4744**	**0.0546**	**0.5290**		**2,336.7084**	**2,336.7084**	**0.0733**		**2,338.2478**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3227	3.1479	3.8463	8.6400e-003	0.2500	0.0490	0.2990	0.0712	0.0450	0.1162		853.3168	853.3168	5.9600e-003		853.4421
Worker	0.4296	0.5535	6.8101	0.0185	1.5202	0.0104	1.5305	0.4032	9.5900e-003	0.4128		1,483.3916	1,483.3916	0.0673		1,484.8057
Total	**0.7523**	**3.7015**	**10.6564**	**0.0271**	**1.7702**	**0.0593**	**1.8295**	**0.4744**	**0.0546**	**0.5290**		**2,336.7084**	**2,336.7084**	**0.0733**		**2,338.2478**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.9853	23.0184	114.2580	0.3859	27.5155	0.3825	27.8980	7.3422	0.3531	7.6953		29,382.6294	29,382.6294	1.0350		29,404.3640
Unmitigated	9.9853	23.0184	114.2580	0.3859	27.5155	0.3825	27.8980	7.3422	0.3531	7.6953		29,382.6294	29,382.6294	1.0350		29,404.3640

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	3,617.46	3,810.24	3315.06	12,307,898	12,307,898
Total	3,617.46	3,810.24	3,315.06	12,307,898	12,307,898

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.508857	0.056420	0.193204	0.150829	0.041936	0.005921	0.015893	0.015805	0.001454	0.002159	0.004747	0.000498	0.002277

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3226	2.7566	1.1730	0.0176		0.2229	0.2229		0.2229	0.2229		3,519.085 6	3,519.085 6	0.0675	0.0645	3,540.502 1
NaturalGas Unmitigated	0.3226	2.7566	1.1730	0.0176		0.2229	0.2229		0.2229	0.2229		3,519.085 6	3,519.085 6	0.0675	0.0645	3,540.502 1

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	29912.2	0.3226	2.7566	1.1730	0.0176		0.2229	0.2229		0.2229	0.2229		3,519.085 6	3,519.085 6	0.0675	0.0645	3,540.502 1
Total		**0.3226**	**2.7566**	**1.1730**	**0.0176**		**0.2229**	**0.2229**		**0.2229**	**0.2229**		**3,519.085 6**	**3,519.085 6**	**0.0675**	**0.0645**	**3,540.502 1**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	29.9122	0.3226	2.7566	1.1730	0.0176		0.2229	0.2229		0.2229	0.2229		3,519.0856	3,519.0856	0.0675	0.0645	3,540.5021
Total		**0.3226**	**2.7566**	**1.1730**	**0.0176**		**0.2229**	**0.2229**		**0.2229**	**0.2229**		**3,519.0856**	**3,519.0856**	**0.0675**	**0.0645**	**3,540.5021**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.5431	0.3619	31.3252	1.6500e-003		0.6283	0.6283		0.6235	0.6235	0.0000	7,260.3881	7,260.3881	0.1928	0.1321	7,305.3817
Unmitigated	114.9323	2.8750	221.2878	0.3039		29.0468	29.0468		29.0423	29.0423	3,540.6952	6,860.1528	10,400.8479	10.6138	0.2403	10,698.2359

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.4580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	13.4719					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	99.0496	2.5131	189.9986	0.3023		28.8748	28.8748		28.8703	28.8703	3,540.6952	6,804.0000	10,344.6952	10.5590	0.2403	10,640.9333
Landscaping	0.9528	0.3619	31.2891	1.6500e-003		0.1721	0.1721		0.1721	0.1721		56.1528	56.1528	0.0548		57.3026
Total	**114.9323**	**2.8750**	**221.2878**	**0.3039**		**29.0468**	**29.0468**		**29.0423**	**29.0423**	**3,540.6952**	**6,860.1528**	**10,400.8479**	**10.6138**	**0.2403**	**10,698.2359**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	13.4719					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.6604	3.0000e-005	0.0360	0.0000		0.4563	0.4563		0.4515	0.4515	0.0000	7,204.2353	7,204.2353	0.1381	0.1321	7,248.0791
Landscaping	0.9528	0.3619	31.2891	1.6500e-003		0.1721	0.1721		0.1721	0.1721		56.1528	56.1528	0.0548		57.3026
Architectural Coating	1.4580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**16.5431**	**0.3619**	**31.3252**	**1.6500e-003**		**0.6283**	**0.6283**		**0.6235**	**0.6235**	**0.0000**	**7,260.3881**	**7,260.3881**	**0.1928**	**0.1321**	**7,305.3817**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Esperanza Hills Operational Build Out

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	378.00	Dwelling Unit	122.73	680,400.00	1081

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Operational Only

Off-road Equipment -

Off-road Equipment - Operational emissions only

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	3.8000e-004	1.9500e-003	5.5000e-003	1.0000e-005	8.7000e-004	3.0000e-005	9.0000e-004	2.3000e-004	3.0000e-005	2.6000e-004	0.0000	1.0325	1.0325	3.0000e-005	0.0000	1.0332
Total	**3.8000e-004**	**1.9500e-003**	**5.5000e-003**	**1.0000e-005**	**8.7000e-004**	**3.0000e-005**	**9.0000e-004**	**2.3000e-004**	**3.0000e-005**	**2.6000e-004**	**0.0000**	**1.0325**	**1.0325**	**3.0000e-005**	**0.0000**	**1.0332**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	3.8000e-004	1.9500e-003	5.5000e-003	1.0000e-005	8.7000e-004	3.0000e-005	9.0000e-004	2.3000e-004	3.0000e-005	2.6000e-004	0.0000	1.0325	1.0325	3.0000e-005	0.0000	1.0332
Total	**3.8000e-004**	**1.9500e-003**	**5.5000e-003**	**1.0000e-005**	**8.7000e-004**	**3.0000e-005**	**9.0000e-004**	**2.3000e-004**	**3.0000e-005**	**2.6000e-004**	**0.0000**	**1.0325**	**1.0325**	**3.0000e-005**	**0.0000**	**1.0332**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0819	0.0767	6.2861	3.9800e-003		0.3824	0.3824		0.3824	0.3824	40.1508	83.5237	123.6745	0.1260	2.7300e-003	127.1642
Energy	0.0589	0.5031	0.2141	3.2100e-003		0.0407	0.0407		0.0407	0.0407	0.0000	1,349.5214	1,349.5214	0.0464	0.0180	1,356.0684
Mobile	1.7087	4.2636	19.5514	0.0641	4.6503	0.0658	4.7161	1.2427	0.0608	1.3034	0.0000	4,437.0876	4,437.0876	0.1614	0.0000	4,440.4767
Waste						0.0000	0.0000		0.0000	0.0000	89.9676	0.0000	89.9676	5.3169	0.0000	201.6232
Water						0.0000	0.0000		0.0000	0.0000	7.8134	141.1328	148.9461	0.8090	0.0203	172.2254
Total	**5.8495**	**4.8433**	**26.0516**	**0.0713**	**4.6503**	**0.4889**	**5.1392**	**1.2427**	**0.4838**	**1.7265**	**137.9318**	**6,011.2654**	**6,149.1972**	**6.4597**	**0.0410**	**6,297.5579**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.8521	0.0452	3.9116	2.1000e-004		0.0272	0.0272		0.0272	0.0272	0.0000	88.0623	88.0623	7.7700e-003	1.5000e-003	88.6898
Energy	0.0589	0.5031	0.2141	3.2100e-003		0.0407	0.0407		0.0407	0.0407	0.0000	1,349.5214	1,349.5214	0.0464	0.0180	1,356.0684
Mobile	1.7087	4.2636	19.5514	0.0641	4.6503	0.0658	4.7161	1.2427	0.0608	1.3034	0.0000	4,437.0876	4,437.0876	0.1614	0.0000	4,440.4767
Waste						0.0000	0.0000		0.0000	0.0000	89.9676	0.0000	89.9676	5.3169	0.0000	201.6232
Water						0.0000	0.0000		0.0000	0.0000	7.8134	141.1328	148.9461	0.8089	0.0203	172.2129
Total	**4.6196**	**4.8119**	**23.6770**	**0.0676**	**4.6503**	**0.1337**	**4.7840**	**1.2427**	**0.1286**	**1.3712**	**97.7810**	**6,015.8040**	**6,113.5850**	**6.3414**	**0.0397**	**6,259.0711**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**21.03**	**0.65**	**9.11**	**5.29**	**0.00**	**72.66**	**6.91**	**0.00**	**73.42**	**20.58**	**29.11**	**-0.08**	**0.58**	**1.83**	**3.07**	**0.61**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	6/1/2017	6/1/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	0	136.00	40.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	1.6400e-003	2.2300e-003	0.0000	1.2000e-004	2.0000e-005	1.5000e-004	4.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.3857	0.3857	0.0000	0.0000	0.3857
Worker	2.1000e-004	3.1000e-004	3.2700e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6468	0.6468	3.0000e-005	0.0000	0.6475
Total	**3.8000e-004**	**1.9500e-003**	**5.5000e-003**	**1.0000e-005**	**8.7000e-004**	**3.0000e-005**	**9.0000e-004**	**2.4000e-004**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0325**	**1.0325**	**3.0000e-005**	**0.0000**	**1.0332**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	1.6400e-003	2.2300e-003	0.0000	1.2000e-004	2.0000e-005	1.5000e-004	4.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.3857	0.3857	0.0000	0.0000	0.3857
Worker	2.1000e-004	3.1000e-004	3.2700e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6468	0.6468	3.0000e-005	0.0000	0.6475
Total	**3.8000e-004**	**1.9500e-003**	**5.5000e-003**	**1.0000e-005**	**8.7000e-004**	**3.0000e-005**	**9.0000e-004**	**2.4000e-004**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0325**	**1.0325**	**3.0000e-005**	**0.0000**	**1.0332**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.7087	4.2636	19.5514	0.0641	4.6503	0.0658	4.7161	1.2427	0.0608	1.3034	0.0000	4,437.0876	4,437.0876	0.1614	0.0000	4,440.4767
Unmitigated	1.7087	4.2636	19.5514	0.0641	4.6503	0.0658	4.7161	1.2427	0.0608	1.3034	0.0000	4,437.0876	4,437.0876	0.1614	0.0000	4,440.4767

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	3,617.46	3,810.24	3315.06	12,307,898	12,307,898
Total	3,617.46	3,810.24	3,315.06	12,307,898	12,307,898

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.508857	0.056420	0.193204	0.150829	0.041936	0.005921	0.015893	0.015805	0.001454	0.002159	0.004747	0.000498	0.002277

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	766.8973	766.8973	0.0353	7.2900e-003	769.8986
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	766.8973	766.8973	0.0353	7.2900e-003	769.8986
NaturalGas Mitigated	0.0589	0.5031	0.2141	3.2100e-003		0.0407	0.0407		0.0407	0.0407	0.0000	582.6241	582.6241	0.0112	0.0107	586.1698
NaturalGas Unmitigated	0.0589	0.5031	0.2141	3.2100e-003		0.0407	0.0407		0.0407	0.0407	0.0000	582.6241	582.6241	0.0112	0.0107	586.1698

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.0918e+007	0.0589	0.5031	0.2141	3.2100e-003		0.0407	0.0407		0.0407	0.0407	0.0000	582.6241	582.6241	0.0112	0.0107	586.1698
Total		**0.0589**	**0.5031**	**0.2141**	**3.2100e-003**		**0.0407**	**0.0407**		**0.0407**	**0.0407**	**0.0000**	**582.6241**	**582.6241**	**0.0112**	**0.0107**	**586.1698**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.0918e+007	0.0589	0.5031	0.2141	3.2100e-003		0.0407	0.0407		0.0407	0.0407	0.0000	582.6241	582.6241	0.0112	0.0107	586.1698
Total		**0.0589**	**0.5031**	**0.2141**	**3.2100e-003**		**0.0407**	**0.0407**		**0.0407**	**0.0407**	**0.0000**	**582.6241**	**582.6241**	**0.0112**	**0.0107**	**586.1698**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.6799e+006	766.8973	0.0353	7.2900e-003	769.8986
Total		**766.8973**	**0.0353**	**7.2900e-003**	**769.8986**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.6799e +006	766.8973	0.0353	7.2900e-003	769.8986
Total		**766.8973**	**0.0353**	**7.2900e-003**	**769.8986**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.8521	0.0452	3.9116	2.1000e-004		0.0272	0.0272		0.0272	0.0272	0.0000	88.0623	88.0623	7.7700e-003	1.5000e-003	88.6898
Unmitigated	4.0819	0.0767	6.2861	3.9800e-003		0.3824	0.3824		0.3824	0.3824	40.1508	83.5237	123.6745	0.1260	2.7300e-003	127.1642

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2661					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.4586					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2381	0.0314	2.3750	3.7800e-003		0.3609	0.3609		0.3609	0.3609	40.1508	77.1561	117.3069	0.1197	2.7300e-003	120.6662
Landscaping	0.1191	0.0452	3.9111	2.1000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	6.3676	6.3676	6.2100e-003	0.0000	6.4980
Total	**4.0819**	**0.0767**	**6.2861**	**3.9900e-003**		**0.3824**	**0.3824**		**0.3824**	**0.3824**	**40.1508**	**83.5237**	**123.6745**	**0.1260**	**2.7300e-003**	**127.1642**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	2.4586					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.2500e-003	0.0000	4.5000e-004	0.0000		5.7000e-003	5.7000e-003		5.6400e-003	5.6400e-003	0.0000	81.6947	81.6947	1.5700e-003	1.5000e-003	82.1918
Landscaping	0.1191	0.0452	3.9111	2.1000e-004		0.0215	0.0215		0.0215	0.0215	0.0000	6.3676	6.3676	6.2100e-003	0.0000	6.4980
Architectural Coating	0.2661					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.8521**	**0.0452**	**3.9116**	**2.1000e-004**		**0.0272**	**0.0272**		**0.0272**	**0.0272**	**0.0000**	**88.0623**	**88.0623**	**7.7800e-003**	**1.5000e-003**	**88.6898**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	148.9461	0.8089	0.0203	172.2129
Unmitigated	148.9461	0.8090	0.0203	172.2254

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	24.6282 / 15.5265	148.9461	0.8090	0.0203	172.2254
Total		**148.9461**	**0.8090**	**0.0203**	**172.2254**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	24.6282 / 15.5265	148.9461	0.8089	0.0203	172.2129
Total		**148.9461**	**0.8089**	**0.0203**	**172.2129**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	89.9676	5.3169	0.0000	201.6232
Unmitigated	89.9676	5.3169	0.0000	201.6232

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	443.21	89.9676	5.3169	0.0000	201.6232
Total		**89.9676**	**5.3169**	**0.0000**	**201.6232**

8.2 Waste by Land Use

Mitigated

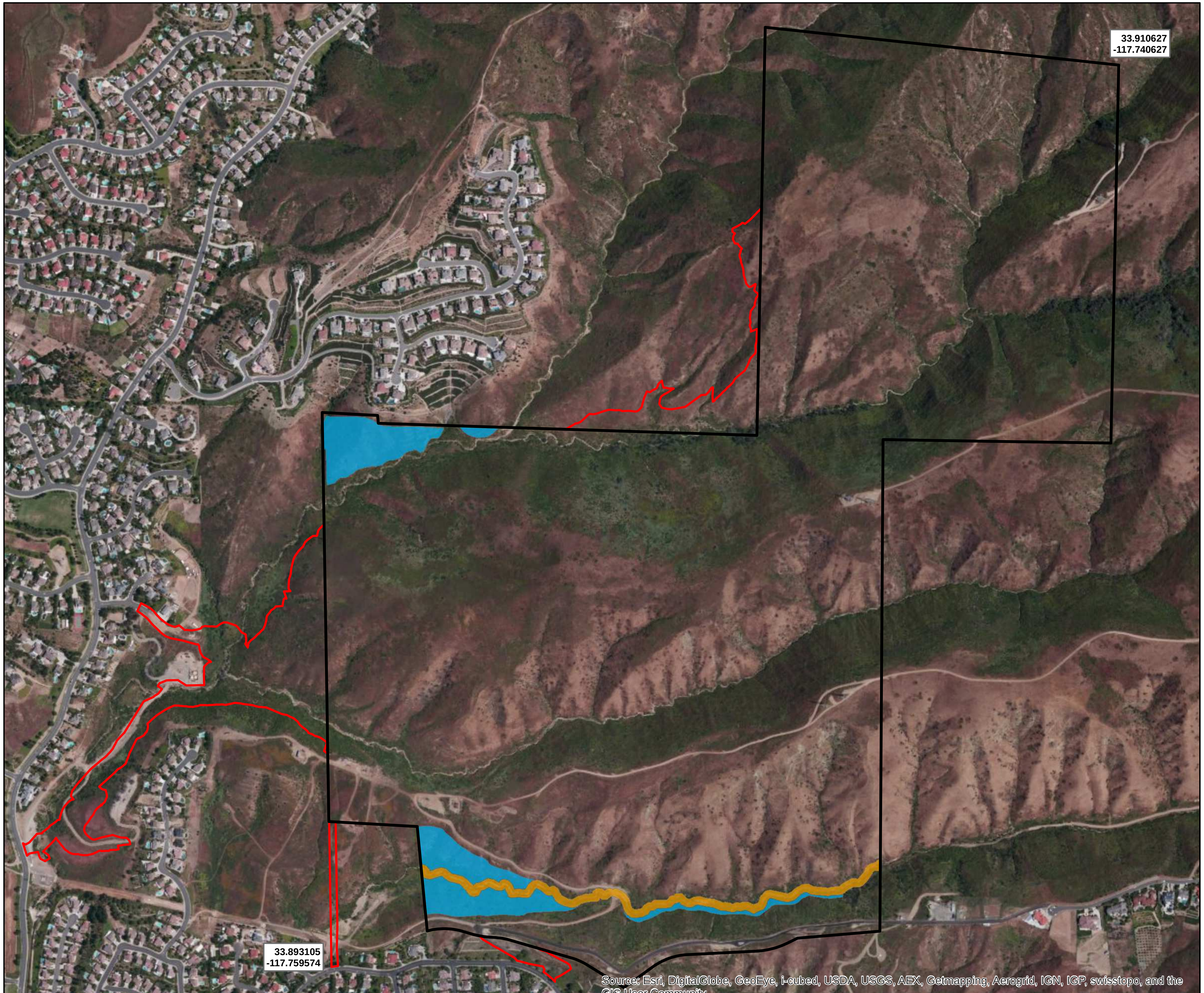
	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	443.21	89.9676	5.3169	0.0000	201.6232
Total		**89.9676**	**5.3169**	**0.0000**	**201.6232**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C –
Biological Resources:
1) Elderberry/Walnut Mitigation Area (Exhibit 11)
2) Habitat Mitigation and Monitoring Plan (HMMP)
3) Fuel Modification (Options 1, 2, 2A/2B
4) Summaries of Fuel Modification Impacts
5) Preliminary Jurisdictional Delineation dated December 6, 2013



Legend

- Property Boundary
- Study Area Boundary
- Proposed Elderberry/Walnut Mitigation Area - 13.63 ac.
- Proposed Ripiarian Mitigation Area - 5.27 ac.

N

0 350 700 1,400
Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: November 20, 2013

ESPERANZA HILLS SPECIFIC PLAN AREA

Proposed Mitigation Area

GLENN LUKOS ASSOCIATES

Exhibit 11

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MITIGATION AND MONITORING PLAN
FOR IMPACTS TO AREAS WITHIN THE JURISDICTION

OF

THE UNITED STATES ARMY CORPS OF ENGINEERS
PURSUANT TO SECTION 404 OF THE CLEAN WATER ACT

AND

THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
PURSUANT TO SECTION 1602 OF THE FISH AND GAME CODE

AND

IMPACTS TO HABITAT OCCUPIED BY THE STATE- AND FEDERALLY-LISTED
ENDANGERED LEAST BELL'S VIREO (*VIREO BELLII PUSILLIS*)

FOR

ESPERANZA HILLS SPECIFIC PLAN AREA

April 2014

Prepared for:

Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

Prepared by:

Glenn Lukos Associates
29 Orchard
Lake Forest, California 92630
Contact: Tony Bomkamp

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ESPERANZA HILLS SPECIFIC PLAN AREA PROJECT
HABITAT MITIGATION AND MONITORING PLAN[1]

OVERVIEW OF HABITAT MITIGATION AND MONITORING PLAN

The following plan sets forth a comprehensive approach for mitigating impacts specific impacts associated with the Esperanza Hills Project. Part 1 describes measures to mitigate impacts to drainages subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act, Regional Water Quality Control Board pursuant to Section 401 of the Clean Water Act and the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code. Part 2 describes measures to mitigate impacts to non-jurisdictional habitats, specifically, blue elderberry woodland and California walnut woodland. A significant component of the mitigation will be performed in Blue Mud Canyon, along the southern boundary of the project, which will subject to broader restoration efforts that will be implemented for fire protection, which will include removal of a substantial amount of non-native weedy material in concert with the installation of native plant material that will reduce fire danger and increase public safety while ensuring that ecological functions are enhanced over the existing condition. Part 2 also sets forth a program that will ensure integration of fire protection/public safety with long-term maintenance of ecological functions.

PART 1: MITIGATION FOR JURISDICTIONAL RESOURCES

I. DESCRIPTION OF THE PROJECT/IMPACT SITE

A. <u>Responsible Parties</u>

Applicant/Permittee:	Yorba Linda Estates, LLC 7114 East Stetson, Suite 350 Scottsdale, Arizona 85251 Contact: Douglas G. Wymore
Preparer of Mitigation Plan:	Glenn Lukos Associates, Inc. Contact: Tony Bomkamp 29 Orchard Lake Forest, California 92630-8300 Telephone: (949) 837-0404

[1] Part 1 of this mitigation program was prepared in accordance with the following document: Army Corps of Engineers, Los Angeles District: *Special Public Notice: Final Mitigation Guidelines and Monitoring Requirements.* Public Notice 970031200-RRS, April 19, 2004.

B. Location of Project and Brief Summary of Overall Project

The Project Site comprises approximately 469 acres adjacent to the city of Yorba Linda within unincorporated Orange County, California, while the Study Area, which includes the Project Site and the location of proposed off-site impacts, comprises 504 acres [Exhibit 1 – Regional Map]. The Project Site is located within Section 17, 18 of Township 3S, Range 8W, of the Yorba Linda (dated 1964 and photorevised in 1981) and Prado Dam (dated 1967 and photorevised in 1981) USGS 7.5" Quadrangle Maps. The Project Site also includes un-sectioned portions of Township 3S, Range 8W [Exhibit 2 – Vicinity Map]. Elevation ranges from approximately 550 feet at the southwest boundary to 1,550 feet at the north boundary. The Study Area is bordered by Blue Mud Canyon and Green Crest Drive to the south, Chino Hills State Park to the north and east, and residential areas adjacent to San Antonio Road to the west. The property immediately north east, and west of the study area is currently open space, while property bordering the southern boundary is residential development.

Esperanza Hills is located within unincorporated Orange County (County) north of the SR-91 Freeway, southwest of Chino Hills State Park, and adjacent to existing residential development in the City of Yorba Linda (City). The Project is east of San Antonio Drive and north of Stonehaven Drive in the City. The project footprint is bordered by Chino Hills State Park on the north and east. To the South and northwest lie existing residential communities, including Dominguez Ranch, Green Hills, Casino Ridge, Travis Ranch, and Yorba Linda Hills. The Cielo Vista project, a proposed residential subdivision in the County, lies to the west and southwest. The Esperanza Hills property is largely undeveloped, with the exception of oil well operation in the western portion of the site.

The Esperanza Hills project proposed to construct 340 single-family residential units on 468.9 acres in the unincorporated portion of the County adjacent to the City. As currently proposed, project components will include approximately 13.9 acres of active and passive parks, 7 miles of trails and 230 acres of open space. The trails will include pedestrian, bicycle, and equestrian trails with linkages to permit non-vehicular access to the Chino Hills State Park and surrounding open space areas. Fuel Modification areas have been identified and emergency access/evacuation plans have been defined in cooperation with the Orange County Fire Authority, and two underground water reservoirs are planned to assist in fire fighting. Two options for access to the community will be analyzed: one with a primary connection going south to Stonehaven Drive and a second with a primary connection going west from the community to Aspen Way, connecting to San Antonio Road. A homeowners' association will manage streets, landscaping, parks, and other amenities.

Habitats on-site include non-native grasslands, coastal sage scrub, chaparral, limited areas of disturbed walnut and oak woodlands, limited amounts of riparian habitat, and disturbed areas. The project site was burned in the "Freeway Complex Fire" in the fall of 2008, and prior had been historically used for animal grazing. Currently the site is used as open space and for energy transmission associated with the Southern California Edison Company. A total of four blue-line drainages occur on site, extending into offsite portions of the Study Area.

C. Jurisdictional Areas to be filled by Habitat Type and Location

Corps jurisdiction at the Esperanza Hills Project Study Area totals approximately 2.08 acres, of which 0.19 acre consists of wetlands. The wetland areas are associated with Drainage D, a small artificial detention basin at the mouth of Blue Mud Canyon (Drainage F) and Drainage G [Corps Jurisdictional Delineation Map - Exhibit 3a]. Three different Project alternatives are currently proposed. The most impactful of the three alternatives, as currently proposed, would impact approximately 1.17 acres of waters of the U.S., of which 0.11 acre consists of wetlands. Impacts would occur within Drainages A, D, E, and F, all of which are non-relatively permanent (i.e. ephemeral) waters (Non-RPWs).

California Department of Fish and Wildlife (CDFW) jurisdiction at the Esperanza Hills Project Site totals approximately 4.15 acres, of which approximately 2.57 acres consist of vegetated riparian habitat [CDFW Jurisdictional Delineation Map - Exhibit 3b]. The most impactful of the three alternatives, as currently proposed, would impact approximately 2.57 acres of CDFW jurisdiction, of which 1.77 acre is vegetated riparian habitat consisting of disturbed coast live oak riparian forest, mulefat scrub, California walnut/mulefat scrub, blue elderberry woodland, and southern willow scrub. A summary of associated impacts to CDFW jurisdiction under each alternative is provided in Table 1 below.

TABLE 1

Impacts to CDFW Jurisdiction

Vegetation Types	Option 1 Impacts	Option 2 Impacts	Option 2A Impacts
Black Willow Riparian Forest	0.0 acre	0.19 acre	0.08 acre
Blue Elderberry Woodland	0.45 acre	0.45 acre	0.45 acre
Mulefat Scrub	0.09 acre	0.09 acre	0.32 acre
Coast Live Oak Riparian Forest	0.54 acre	0.54 acre	0.54 acre
Detention Basin	0.02 acre	0.02 acre	0.02 acre
Southern Willow Scrub	0.0 acre	0.0 acre	0.36 acre
Unvegetated Channel	0.80 acre	0.80 acre	0.80 acre
Total:	**1.90 acres**	**2.09 acre**	**2.57 acre**

D. Type(s), Functions and Values of the Jurisdictional Areas to be Directly and Indirectly Impacted

Functions and values to be affected by the project are divided into three categories: hydrologic, biogeochemical, and habitat. Each is addressed below.

1. Hydrologic Functions

The drainages to be affected occur at the bottom of deep canyons and generally range from one to four feet wide. As such, there is little potential for surface water storage and limited potential for recharge of groundwater. The narrow drainages support only limited areas of riparian vegetation, which is typically outside of the active channel and therefore exhibit limited potential for energy dissipation. In short, the drainages exhibit limited hydrological functions, typical of ephemeral drainages within the region.

2. Biogeochemical Functions

The largely unvegetated ephemeral drainages exhibit biogeochemical functions typical of ephemeral drainages in the region including export of particulate carbon and other fine organic matter; however, all of the drainages ultimately discharge to offsite storm drains, which in turn empty into the Santa Ana River, which exhibits very limited habitat value as it is managed for purposes of groundwater recharge. Similarly, the drainages exhibit limited potential for water quality improvement (e.g., retention of particulates and/or removal of elements and compounds) for two reasons: first, due to the limited amount of riparian vegetation, steep gradients, and narrow width and second, because the site is currently in a natural state (albeit much of the vegetation consists of non-native weedy species).

3. Habitat Functions

As noted, the drainages on the site support limited areas of riparian habitat consisting mostly of small patches of non-wetland mulefat (*Baccharis salicifolia*) intermixed with other upland vegetation including scattered blue elderberry (*Sambucus nigra* ssp. *caerulea*). Drainage D includes limited areas of coast live oak riparian forest, which burned during the Freeway Complex Fire in late 2008, killing approximately half of the oaks with about half of the oaks exhibiting some re-growth, though in poor condition. Drainage F (Blue Mud Canyon) supports scattered patched of willow and mulefat including at the downstream limit, which is offsite but which would be affected by utilities and an emergency access route. As discussed below, an off-site area, at the mouth of Blue Mud Canyon has recently supported least Bell’s vireo, a state- and federally listed songbird.

E. Occupied Least Bell's Vireo Habitat to be Impacted

Three Project alternatives are currently proposed. The most impactful of the three, as currently proposed, would permanently impact approximately 0.05 acre of mulefat scrub vegetation, 0.09 acre of black willow riparian forest, and 0.36 acre of southern willow scrub occupied by the state- and federally listed endangered least Bell's vireo (LBV) [Exhibit 5]. The LBV is a state- and federally listed endangered species, and as such both CDFW and US Fish and Wildlife Service (USFWS) regulate impacts to occupied LBV habitat.

II. OBJECTIVES OF THE COMPENSATORY MITIGATION

The objectives of the proposed habitat mitigation and monitoring program (HMMP) is to provide for (1) full mitigation of permanent impacts, which under the most impactful project alternative consist of impacts to 1.17 acres of waters of the U.S., of which 0.11 acre consists of wetlands, and 2.57 acres of CDFW jurisdiction, of which 1.77 acre is vegetated riparian habitat; and (2) mitigation for impacts to 0.05 acre of mulefat scrub, 0.09 acre of black willow riparian forest, and 0.36 acre of southern willow scrub occupied by the state- and federally listed endangered LBV.

Table 2 provides a summary of mitigation required for each CDFW jurisdictional resource under each of the alternatives.

TABLE 2

Mitigation for CDFW Jurisdictional Resources

Resource to be Mitigated	Option 1	Option 2	Option 2A
	Mitigation Required		
CDFW Riparian (at 2:1)	2.20 acres	2.58 acres	3.54 acres
CDFW Unvegetated Channel (at 1:1)	0.80 acre	0.80 acre	0.80 acre
Total CDFW	**3.0 acres**	**3.38 acres**	**4.34 acres**

The goals will be achieved through permittee-responsible mitigation that incorporates components of a watershed approach that includes: (1) onsite replacement or enhancement of the functions provided by the existing ephemeral drainages and associated wetland and riparian habitats to be impacted, (2) in some instances, establishment of additional hydrologic, biogeochemical and wildlife functions currently not associated with drainages to be impacted; (3) fostering an increase in the habitat values beyond those currently provided by the existing streambeds, wetlands and/or riparian habitats; and (4) providing optimal breeding habitat for least Bell's vireo (LBV). In determining the best way to ensure no net-loss of aquatic resource functions in the region, a number of factors were considered, including:

- The functioning and impairment of existing aquatic resources onsite;
- The best location for rehabilitation of aquatic resources;
- The relative acreage for each habitat type of impacted aquatic resource; and
- The opportunity to compensate for potential cumulative impacts.

In order to achieve the goal of no-net-loss of aquatic resource functions, this HMMP proposes rehabilitation, using components of the watershed approach set forth at 40 CFR Part 230: *Compensatory Mitigation for Losses of Aquatic Resources; Final Rule*. ("Mitigation Rule")[2]

A. Types and Areas of Habitat to be Rehabilitated

In order to offset impacts to Corps and CDFW jurisdiction and ensure the goals of no-net loss of riparian habitat and associated functions, including coast live oak riparian forest, mulefat scrub, California walnut/mulefat scrub, elderberry woodland and southern willow scrub, the Project will include rehabilitation of southern willow scrub and southern coast live oak-California walnut riparian forest within Blue Mud Canyon (Drainage F). Under the most impactful alternative, a minimum of 4.34 acres would be rehabilitated, for a ratio of 2:1 for CDFW impacts and 3.7:1 for Corps impacts. Additionally, the one acre rehabilitated southern willow scrub habitat will mitigate for impacts to 0.05-acre of mulefat scrub, 0.09 acre of black willow riparian forest, and 0.36 acre of southern willow scrub habitat occupied by LBV at a ratio of 2:1. The candidate mitigation areas proposed for mitigation of CDFW and Corps jurisdictional impacts and impacts to habitat occupied by LBV are summarized in Table 3 below and depicted on Exhibit 6. If a less impactful alternative is ultimately selected, mitigation will be installed at ratios noted above for Corps and CDFW.

TABLE 3
SUMMARY OF CANDIDATE MITIGATION AREAS

Mitigation Site	Mitigation Type	Habitat Type	Area (Acres)
Blue Mud Canyon (Drainage F)	Rehabilitation	Southern Willow Scrub	1.0
Blue Mud Canyon (Drainage F)	Rehabilitation	Coast Live Oak-Walnut Riparian Forest	3.34
		TOTAL	4.34**

**Although up to 5.30 acres of candidate mitigation area is available, actual mitigation acreage will be installed at a 3.7:1 ration for Corps impacts, 2:1 ratio for CDFW impacts and 2:1 for LBV impacts.

The rehabilitation mitigation site within Blue Mud Canyon would offset impacts to Corps jurisdiction, as it is a water of the United States and exhibits an OHWM. Following implementation of the mitigation project, it is expected that areas will support vegetated riparian habitat with portions exhibiting wetland characteristics.

For the above-referenced mitigation areas, the 5.30-acre candidate area of southern willow scrub and coast live oak-California walnut riparian forest in Blue Mud Canyon are appropriately categorized as rehabilitation under the Mitigation Rule, as there will be a gain in aquatic resource

[2] Federal Register Vol. 73 No. 70. April 10, 2008. Department of Defense: Department of the Army, Corps of Engineers, 33 CFR Parts 325 and 332 and Environmental Protection Agency, 40 CFR Part 230 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule.

function but no gain in aquatic resource area. The portion of Blue Mud Canyon to be established as the mitigation site currently exhibits an OHWM that ranges from four to six feet wide, and is generally vegetated with patches of mulefat scrub, remnant California walnut woodland (many were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed and/or damaged by the fire). However, following the 2008 fire, much of the fire-damaged native vegetation on the slopes on either side of the Drainage F was largely displaced by non-native species including poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinus communis*). In general Drainage F is characterized by a dominance of bush mallow (*Malacothamnus fasciculatus*, UPL) and poison hemlock (*Conium maculatum*, FAC), limited areas of Arroyo willow (*Salix lasiolepis*, FACW), mulefat (*Baccharis salicifolia*, FAC), coyote bush (*Baccharis pilularis*, UPL), laurel sumac (*Malosma laurina* UPL), giant wild rye (*Elymus condensatus*, FACU), and non-native sweet fennel (*Foeniculum vulgare*, UPL).

B. Specific Functions and Values of Habitat Types to be Rehabilitated

Upon successful implementation, the mitigation site will provide replacement of functions and values for impacts to ephemeral drainages, vegetated riparian habitat, most of which is degraded and has a substantial component of non-native species, and a very small area of jurisdictional wetlands (0.11 acre). The proposed rehabilitation of southern willow scrub and coast live oak-walnut riparian forest within the 5.30-acre candidate mitigation area provides for no-net-loss of both function and area of wetland and riparian resources.

Additionally, the proposed rehabilitation of southern willow scrub will provide optimal breeding habitat for LBV and offsets the loss of occupied riparian habitat at a ratio of at least 2:1.

C. Time Lapse Between Jurisdictional Impacts and Expected Compensatory Mitigation Success

Project grading activities will commence upon receipt of permits with project impacts expected to occur immediately thereafter. Mitigation site grading, planting, and irrigation shall begin prior to or concurrent with the planned date of initiating authorized fill activities. Eradication of non-native plant species encountered will be concurrent with commencement of grading.

Within one year of the completion of mitigation installation, it is expected that immature riparian vegetative structure will exist such that insects and birds will utilize the mitigation site for foraging, and within approximately three years, the riparian vegetative structure will be sufficiently mature to support LBV.

D. Estimated Total Cost

Table 4 below indicates the estimated cost for implementation, maintenance, and monitoring of the mitigation area for five years.

TABLE 4 ESTIMATED MITIGATION COST FOR 4.34 ACRES	
Task	**Cost**
Grading (costs included with general site grading)	N/A
Mobilization	$6,400
Site Preparation	$11,200
Irrigation Installation	$40,000
Installation (includes plants and seeds)	$56,000
Project Maintenance	$120,000
Project Monitoring and Reporting	$80,000
Total	**$313,600**

III. DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITE

A. Location and Size of the Compensatory Mitigation Site

The 5.30-acre candidate mitigation site will be located in the portion of Blue Mud Canyon (Drainage F) not subject to project impacts as depicted on Exhibit 6. Under the most impactful alternative, the mitigation area will include rehabilitation of 1.00 acre of southern willow scrub and 3.34 acres of coast live oak-walnut riparian forest.

Selection of this area is consistent with the site selection criteria set forth on page 19674 of the Mitigation Rule. Specifically, characteristics of Blue Mud Canyon include (1) hydrological and other physical characteristics conducive to rehabilitation; (2) sufficient hydrologic sources to support the rehabilitation project; (3) location where it would be compatible with adjacent land uses, as it is located within a portion of the Specific Plan Area not planned for development; and (4) it will provide habitat for the state- and federally-listed endangered least Bell's vireo. The rehabilitation area is described below.

B. Ownership Status

The present owners of the mitigation areas are:

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

C. Existing Functions and Values of the Rehabilitation Mitigation Site

The portion of Blue Mud Canyon to be established as the mitigation site currently exhibits an OHWM, and supports vegetation that established following the 2008 Freeway Complex Fire that includes dense areas of bush mallow mixed with locally dense stands of poison hemlock, scattered castor bean and tree tobacco interspersed with occasional patches of mulefat and willow scrub, remnant California walnut woodland (most were killed or damaged by the 2008 Freeway Complex Fire), and limited amounts of blue elderberry woodland (also largely killed or damaged by the fire). In general Drainage F besides the areas dominated by bush mallow (*Malacothamnus fasciculatus*, UPL) poison hemlock (*Conium maculatum*, FAC), and limited areas of arroyo willow (*Salix lasiolepis*, FACW) and mulefat (*Baccharis salicifolia*, FAC), the banks of the drainage support scattered individuals of coyote bush (*Baccharis pilularis*, UPL), laurel sumac (*Malosma laurina* UPL), and giant wild rye (*Elymus condensatus*, FACU).

Subsequent to the 2008 Freeway Complex Fire, the habitat functions of Drainage F were greatly reduced, as much of the riparian habitat burned. Following the 2008 fire, much of the fire-damaged native vegetation on the terraces/slopes on either side of the Drainage F was displaced by non-native species including poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinus communis*). The areas of willow and mulefat are slowly recovering, but during surveys in early 2013, only exhibited roughly half the cover of their pre-fire condition.

D. Jurisdictional Delineation of Mitigation Areas

As noted above, Blue Mud Canyon is subject to Corps and CDFW jurisdiction and has an OHWM that varies from 6 to 8 feet within the area to be rehabilitated and supports mulefat scrub, remnant California walnut woodland (most were killed or damaged by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed or damaged by the fire). The slopes adjacent to the drainage are outside of Corps jurisdiction, but are appropriate for inclusion of the mitigation site as they currently support areas of invasive non-native species and conversion to native riparian habitat would improve the aquatic functions and values of the mitigation site and watershed.

E. Present and Proposed Uses of Mitigation Site

Blue Mud Canyon is an existing drainage that supports areas of mulefat scrub, remnant California walnut woodland (most were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed by the fire) and is currently undeveloped. Upon completion of the grading, limited portions of the drainage at the far western edge of the project site will be filled for road construction and utility installation. The remainder of the on-site portion of the drainage will be planted with riparian vegetation.

IV. IMPLEMENTATION PLAN FOR THE COMPENSATORY MITIGATION SITES

A. Rationale for Expecting Implementation Success

The proposed mitigation will be installed prior to or concurrent with impacts to Corps and CDFW jurisdiction. Specific rationale for expecting implementation of the various components of the mitigation program is provided below.

The proposed mitigation area within Blue Mud Canyon is a good candidate for habitat rehabilitation for several reasons and will result in an increase in aquatic functional capacity within the Santa Ana River watershed to which the proposed impact site contributes. First, hydrology to support the wetland/riparian areas within the sites is assured from existing sources. Second, the proposed plant palettes consist of species that occur onsite and are known to perform well in habitat restoration programs. After minimal localized grading, which will serve to enhance hydrological conditions in a few areas, the mitigation areas will be ideal for species such as willows, coast live oak, California walnut, blue elderberry, and mulefat as well as suite of diverse understory species. The restored habitat areas will be located at the optimal elevations and distance from the main channel with the driest areas supporting coast live oak, blue elderberry, and California walnut, and the wettest areas supporting arroyo willow, black willow, and mulefat with an appropriate understory. The tenacious quality of native riparian plant species, which allows their continued survival in areas of natural disturbance, also helps to ensure their establishment as part of the proposed mitigation. Natural recruitment and reproduction is expected within the site.

With regard to least Bell's vireo, it is expected that the rehabilitated habitat will exhibit sufficient canopy structure to support breeding LBV within approximately three years of mitigation installation. As LBV were observed in mulefat scrub in Drainage F in 2012, and documented to have nested in Drainage G on the west side of the Project Study Area in 2012, it is expected that LBV will immediately begin to utilize the mitigation site for foraging and potentially for breeding.

B. Responsible Parties

Applicant/Permittee:	Yorba Linda Estates, LLC 7114 East Stetson, Suite 350 Scottsdale, Arizona 85251 Contact: Douglas G. Wymore
Preparer of Mitigation Plan:	Glenn Lukos Associates, Inc. Contact: Tony Bomkamp 29 Orchard Lake Forest, California 92630-8300 Telephone: (949) 837-0404

C. Implementation Schedule

The mitigation installation contractor (herein "Contractor"), shall be responsible for site preparation, irrigation installation and mitigation plantings, which shall begin during construction activities. Compensatory mitigation designated to occur within the mitigation site shall be installed no later than one construction season after commencement of fill activities within jurisdictional waters.

Table 5 below indicates timing of intended impacts to Corps and CDFW jurisdiction and LBV habitat, site grading, eradication of weedy exotic plant species, site preparation and planting. The Contractor will retain a biological monitor with appropriate experience with site flora & fauna ("Project Biologist") to supervise and provide biological monitoring during project construction, site preparation, installation of plant materials and maintenance.

TABLE 5 IMPLEMENTATION SCHEDULE	
Impacts to Corps and CDFW Jurisdiction and LBV Habitat	Year 1
Mitigation Site Grading	Year 1
Site Preparation	Year 1
Irrigation Installation	Year 2
Container Stock Installation	Year 2
Hydroseeding	Year 2

D. Site Preparation

Site preparation shall consist of minor localized grading, clearing and controlling exotic plants, trenching and installation of underground irrigation components, removing trash and debris, preparing planting holes and doing any other work necessary to make ready the area for planting. No restoration or mitigation shall occur in fuel modification zones, future project areas or areas of maintenance.

Mitigation Site Grading Plan

As the topography of the mitigation site is generally satisfactory under existing conditions for establishing the mitigation site, only minimal localized grading will be necessary. For those areas that require grading, a grading plan for the Blue Mud Canyon mitigation site will be developed making use of existing hydrological data, however, micro elevations and micro grading will be determined by the Project Biologist in conjunction with the project hydrologist with adjustments occurring based on site conditions at that time. The work area shall be flagged to identify its limits within the project footprint to avoid unnecessary impact to areas outside of the mitigation site. Vegetation shall not be removed or intentionally damaged beyond these limits. Vegetation in this area consists of mulefat scrub, remnant California walnut woodland (most were killed by the 2008 Freeway Complex Fire), California walnut woodland/mulefat scrub, and limited amounts of blue elderberry woodland (also largely killed by the fire), and if living vegetation is damaged, shall be included into the mitigation. No equipment shall be operated within the drip line of preserved oaks. Protective fencing shall be placed around the drip line of all preserved oaks to prevent compaction of the root zone.

Exotic Vegetation Control

The predominance of non-native, invasive weed species throughout California has presented a challenge to most native revegetation projects. Weedy species are opportunistic, rapidly colonizing disturbed sites such as revegetation sites. This can lead to the displacement of native species if the weedy species are not properly treated. Several of these invasive species are capable of out-competing most native understory and herbaceous plants and some can out-compete and even displace existing native trees and shrubs. Therefore, non-native vegetation including but not limited to poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), will be removed from the mitigation site and disposed of in a manner and at a location which prevents its reestablishment. Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of the mitigation monitoring period.

Although it has not been detected during previous survey efforts, if giant reed (*Arundo donax*) is present, it shall be cut to a height of 6 inches or less, and the stumps painted with an herbicide approved for aquatic use within 5 minutes of cutting. Herbicides shall be applied at least three times during the period from May 1 to October 1 to eradicate these plants. Where proposed methods for removing giant reed deviate from this procedure, the Contractor shall present the alternate methods, in writing, to CDFW for review and approval, prior to construction.

One of the largest obstacles to the successful revegetation of a site is the exotic seed bank residing in the soil. This seed bank can persist for several years, or even decades, and poses one of the major threats to restoration programs. Undesirable exotic plants will be eradicated either during initial site grading or prior to site preparation. If grading precedes planting by more than a few months, it will be necessary to eradicate undesirable exotic plants that have become established prior to planting and seeding of the mitigation sites. If deemed necessary, a "grow-and-kill" cycle will be established during that period. "Grow and kill" is a cycle of applying water, germinating the non-native, invasive species and spraying with the appropriate chemical. This allows a large portion of the seed bank currently present in the soil to be removed. Eliminating or substantially reducing the competition from non-native exotics early in the life cycle of native plants helps to ensure more rapid growth and cover by the native species.

Initially and whenever possible, invasive species shall be removed by hand or by hand-operated power tools rather than by chemical means. Where control of non-native vegetation is required within the bed, bank, or channel of a stream using herbicides and there is a possibility that the herbicides could come into contact with water, the Contractor shall employ only those herbicides, such as Rodeo/Aquamaster (Glyphosate), which are approved for aquatic use. If surfactants are required, they shall be restricted to non-ionic chemicals, such as Agri-Dex, which are approved for aquatic use.

The type, quantity, and method of herbicide application will be determined by a California licensed Pest Control Advisor (PCA) who will inspect the site, write project recommendations and submit same to the Project Biologist for approval. Pesticide recommendations shall include, but are not limited to, the pesticides to be used, rates of application, methods of application, and areas to which pesticides are to be applied. A licensed Pest Control Operator (PCO) may work under the supervision of the PCA who will employ best management practices regarding the timing, quantity, and type of herbicide for each species. The PCA will determine both immediate and follow-up herbicide application for each species.

No herbicides shall be used where threatened or endangered plant species occur, when wind velocities are above 5 miles per hour, or on native vegetation unless specifically authorized, in writing, by CDFW.

A small amount of selective trimming of native species (e.g. willow, oak and sycamore) may occur to prevent overspray of herbicide from reaching these branches, but only as provided within the conditions of the Streambed Alteration Agreement issued by CDFW and this Mitigation Plan. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches diameter breast height (DBH) shall require specific notice to and consultation with CDFW.

Weed control will be maintained throughout the monitoring period. Weeds will be controlled before their setting of seed. Ongoing weed control will be accomplished manually by the use of a hoe or other tool to uproot the entire plant, a mower or weed whip to cut plants, or by herbicide application as prescribed in this Mitigation Plan. Weed species identified as invasive, particularly tenacious, or those with wind-borne seed will be subject to the earliest control efforts. The Project Biologist will direct the contractor regarding the selection of target weed species, their location and the timing of weed control operations to ensure that native plants are avoided to the extent possible.

Contractor Education
Prior to the commencement of grading or any construction work, the Contractor will review all aspects of the Mitigation Plan that concern the contractors including permit requirements, site protection, maintenance inspections, landscape procedures and monitoring.

The Applicant/Permittee shall make the Contractor and all other contractors, subcontractors and the project supervisors aware of the Corps Authorization and the CDFW Streambed Alteration Agreement. Copies of the permits shall be kept onsite at all times during periods of active work and must be presented to any agency personnel upon demand.

Nesting Birds
The Contractor may remove vegetation within drainages from March 1 to July 31 if a qualified biologist conducts a survey for nesting birds within three days prior to the vegetation removal and ensures no nesting birds shall be impacted by the project. These surveys shall include the areas within 200 feet of the edge of the proposed impacts. If active nests are found, a minimum 50-foot (200 feet for raptors) fence barrier shall be erected around the nest site. No habitat removal or any other work shall occur within the fenced nest zone if the nest continues active beyond July 31, until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the project. The Contractor shall submit the mapped survey results to CDFW for review and approval prior to vegetation removal to ensure full avoidance measures are in place. The Contractor will adhere to all applicable requirements of federal and state codes (e.g., Migratory Bird Treaty Act and CDFG Code 3503.5).

E. Planting Plan

Two riparian associations will be rehabilitated within the proposed mitigation areas: willow-mulefat riparian forest and coast live oak-walnut riparian woodland. These plant communities were selected based on surveys conducted during various biological survey visits including vegetation mapping and jurisdictional delineation. Woody plant species were selected to create a mature tree canopy and provide wildlife forage, shelter and nesting places, including habitat for LBV. Planting shall consist of preparing planting holes, planting container stock, installing plant protection devices, applying mulch and hydroseeding. No planting shall be done in any area until the area concerned has been prepared in accordance with the plans and presents an appearance satisfactory to the Project Biologist.

All planting should be done after the first wetting rains between October 1 and February 1 to take advantage of the winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Should the Contractor be required to plant during other times of the year, chances of survival are diminished. To compensate for decreased survival rates, the Operator shall be required to augment the specified planting density by 25-percent to account for the likelihood of increased mortality of plantings. Completion of all mitigation requirements shall be concluded within two years of project implementation within jurisdictional areas. Planting, maintenance, monitoring and reporting activities shall be overseen by a specialist familiar with restoration of native plants. The Contractor shall place structures on properties so that fire clearance activities will not impact vegetation on stream courses, mitigation areas, or associated buffer areas.

Plant Palettes

The mitigation site will be vegetated with plant species native to the Yorba Linda and Chino Hills Area and surrounding areas. The proposed revegetation plant palettes for the revegetation habitat types are designated below in Tables 6 and 7. The plant palettes define species, spacing and total quantity of plants per acre required. CDFW recommends that the landscaping within the open spaces and common areas of the development utilize native plant species. The use of invasive non-native plants is strongly discouraged.

<u>Southern Willow Scrub Riparian Scrub</u>

This plan provides for the rehabilitation of 1.0 acre of southern willow scrub scrub based primarily on riparian forest composition in Drainage G. If a less impactful Project Alternative is selected, the mitigation will be reduced accordingly while maintaining a 2:1 ratio for CDFW impacts. The planting palette is presented in Table 6 below.

TABLE 6
WILLOW-MULEFAT RIPARIAN SCRUB
(1.0 acre to be rehabilitated)

Botanic Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Percent
Canopy					
Salix goodingii	Black willow	1 gal	20' o.c.	75	19%
Salix lasiolepis	Arroyo willow	1 gal	15' o.c.	100	25%
Salix exigua	Narrow-leaf willow	1 gal	10' o.c	200	50%
Sambucus nigra ssp. *caerulea*	Blue elderberry	1 gal	30' o.c.	25	6%
Subtotal				**400**	**100%**
Understory					
Isocoma menziesii	Coast goldenbush	1 gal	8' o.c.	100	12.5%
Rosa californica	California rose	1 gal	8' o.c.	100	12.5%
Baccharis pilularis	Coyote bush	1 gal	8' o.c.	100	12.5%
Baccharis salicifolia	Mulefat	1 gal	4’ o.c.	200	25%
Artemesia douglasiana	Mugwort	Liner	8’ o.c	100	12.5%
Rubus ursinus	Blackberry	Liner	8’ o.c	100	12.5%
Subtotal				**700**	**100%**
Total Container Stock				**1100**	

Coast Live Oak-California Walnut Riparian Forest

This plan provides for the rehabilitation of 3.34 acres subject to CDFW jurisdiction of coast live oak-walnut riparian forest based primarily on the riparian woodland composition in Drainages F and D. The planting palette is presented in Tables 7 below.

TABLE 7
COAST LIVE OAK-WALNUT RIPARIAN WOODLAND PLANT PALETTE
(3.34 acres riparian)

Botanic Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Percent
Canopy					
Quercus agrifolia	Coast live oak	1 gal	40' o.c.	10	10%
Sambucus nigra ssp. *caerulea*	Blue elderberry	1 gal	40' o.c.	50	50%
Juglans californica	California walnut	1 gal	30' o.c.	40	40%
Subtotal				**100**	**100%**
Understory					
Heteromeles arbutifolia	Toyon	1 gal	30’ o.c.	50	6%
Baccharis salicifolia	Mulefat	1 gal	10’oc	100	13%
Malosma laurina	Laurel sumac	Liner	30' o.c.	50	6%
Rosa californica	California rose	Liner	12' o.c.	100	13%
Ribes speciosum	Fuchsia-flowered gooseberry	1 gal	20’ o.c.	50	6%
Rhamnus ilicifolia	Holly-leaved redberry	1 gal	20’ o.c.	50	6%
Elymus condensatus	Giant wildrye	1 gal	Clumped	100	13%
Mimulus aurantiacus	bush monkey flower	1 gal	Clumped	50	6%
Stipa pulchra	Purple needlegrass	1 gal	Clumped.	100	13%
Melica imperfecta	Coast range melic	1 gal	12’ o.c.	50	6%
Baccharis pilularis	Coyote bush	1 gal	12” o.c.	100	13%
Subtotal				**800**	**100%**
Total Container Stock				**900**	**100%**

Source of Plant Materials

It is preferred that the source of all propagules and seed used at the mitigation site be from the site or adjacent riparian areas. If not available, the remainder of propagules and seed required will be from wild sources within Orange County or eastern Los Angeles County, and collected as close to the mitigation sites as possible to preserve regional genetic integrity.

Plant material for revegetation shall be derived from cuttings, materials salvaged from disturbed areas, and/or seeds obtained from randomly selected native trees and shrubs occurring locally within the same stream. Any replacement tree/shrub stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, be ant free and shall not be inoculated to prevent heart rot. If any materials must be obtained from other than onsite sources, the Project Biologist shall provide CDFW with a list of all such materials.

Contract Growing
Contract growing of all container plants shall be by a local experienced native plant nursery. Substitution of plant material at the time of planting depends solely upon the discretion of the Project Biologist. Any substitutions that are approved will be documented in the As-Built Plans.

Container Plants
One-gallon container stock, rosepots and liners shall be utilized for container stock production in order to develop vertical heterogeneity (strata). All plant materials will be inspected by the Project Biologist and approved as healthy, disease free and of proper size prior to planting. Overgrown, root-bound container stock will be rejected.

Mycorrhizal Fungi
Mycorrhizae are specialized fungi found on plant roots. A symbiotic relationship exists between plant roots and mycorrhizae wherein the plants benefit from the increased ability to take up nutrients and withstand drought when mycorrhizae are present. This relationship is essential to the growth rate, well-being, and longevity of native plant communities. Plant utilization of mycorrhizal fungi markedly increases the success of revegetation on disturbed or degraded lands. All appropriate container-grown plants, except those known to be non-host species, shall be inoculated with mycorrhizal fungi prior to delivery to the job site.

Plant Placement
Container stock will be laid out in such a manner that mimics natural plant distribution (i.e., in clusters and islands) to emulate regional reference sites. The Project Biologist will monitor and confirm that trees and shrubs have been placed at the designed elevation relative to the water source supporting them, such as ground water. All plants shall be planted in randomly spaced, naturally clumped patterns. The average planting densities shall meet the criteria specified in Tables 6 and 7.

Planting Method for Rose Pot and/or Liner Plant Stock
Rose pot and/or liner plant stock will be placed in a hole measuring at least twice the diameter and depth of the container. The root structure will be examined and excess root material removed. The top of the rootball will be set slightly above finish grade. The planting hole will be backfilled with native soil. Fertilizer, watering basins, and mulch are not required for this planting method.

Planting Method for Container Stock
One-gallon container stock will be planted in a hole measuring at least twice the diameter of the container and twice the depth. Container stock will be thoroughly watered the day before planting. One teaspoon (0.3 oz.) of Osmocote 14-14-14 (or equal) will be placed one inch below the root zone and backfilled with native soil to proper planting depth. The container will be upended into the palm of the hand to avoid damage to the root structure and placed in the planting hole. The top of the root ball will be set one inch above finish grade. The planting hole will be backfilled with native soil.

A three-inch high, hand-compacted earth berm, approximately 36 inches in diameter, will then be constructed around each container plant. This watering basin will be maintained until the plants are no longer irrigated. Mulch will be applied as a top dressing, 2 to 3 inches thick, but must not come in contact with the stem of the plant. Container stock will be watered immediately after installation.

Erosion Protection
To provide protection from erosion, willow cuttings shall be planted on 6-8 ft centers on the restored slope, or other appropriate erosion control methods. Willows shall be planted during the willow's dormant season, and shall be augured/dug into the groundwater or wetted soil. Areas of disturbed soils with slopes toward a stream or lake shall be stabilized to reduce erosion potential. Planting, seeding and mulching is conditionally acceptable. Where suitable vegetation cannot reasonably be expected to become established, non-erodible materials, such as coconut fiber matting, shall be used for such stabilization. Any installation of non-erodible materials not described in the original project description shall be coordinated with CDFW. Coordination may include the negotiation of additional Streambed Alteration Agreement provisions for this activity.

Pruning and Staking
There will be no pruning or staking of any vegetation. Diseased or insect-damaged foliage, if sufficient to require pruning, will serve as a benchmark for rejection of plant material.
A small amount of selective trimming of native species (e.g. willow, oak and sycamore) is allowed to prevent overspray of herbicide from reaching these branches, but only as provided within the conditions of the CDFW Streambed Alteration Agreement. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches DBH shall require specific notice to and consultation with CDFW.

F. <u>Irrigation Plan</u>

The Contractor shall provide irrigation for each mitigation site when natural moisture conditions are inadequate to ensure survival of plants. Irrigation shall be provided for a period of at least two years from planting. Irrigation shall be phased out during the fall/winter of second or third year unless unusually severe conditions threaten survival of plantings. All plants must survive and grow for at least two years without supplemental water for the restoration phase of the project to be eligible for acceptance by CDFW. Long-term irrigation may be incorporated into portions or all of the southern willow scrub and coast live oak-California walnut woodland that overlaps with the fire-prone plant removal areas as depicted on Exhibit 4.

Coarse mulch shall be placed around plantings to minimize water loss and discourage weed growth. Mulch shall be 3 to 4 inches deep and shall be placed in a minimum area 1.5 times the diameter of the drip line of the plant or 2 feet in diameter whichever is greater. The mulched area shall be maintained throughout the course of restoration, unless otherwise authorized in writing by CDFW. Mulch shall not be placed directly against the main stem of the plants.

Supplemental irrigation is to be used solely for the purpose of establishing the plants at the mitigation site and is of a temporary nature, with the exception of areas subject to fire-prone plant removal. The goal of the irrigation program is to obtain germination and growth with the least amount of irrigation. Frequent irrigation encourages weed invasion and leaches nutrients from the soil.

The mitigation sites will be initially supported by a short-term automatic irrigation system as well as from existing water sources. Drip irrigation may be provided for trees and shrubs planted on the slopes. The container stock will be irrigated as long as necessary to establish the root systems in the native soils, probably two or three summers. The main line will be installed below-grade. All lateral lines will be installed above-grade for ease of removal and inspection. Alternatively, lateral lines may be installed below-grade and abandoned in place after project conclusion.

The critical period for irrigation is during the first winter and early spring following planting. During this time, roots are not well established and an unseasonable drought can cause high mortality. During dry periods after plant installation, the Project Biologist and the maintenance contractor will regularly inspect soil moisture. Watering during the summer dry season will occur as frequently as required.

After the initial plant establishment period, water will be applied infrequently and only as required to prevent the mortality of plants and seedlings. The irrigation methods employed will attempt to mimic wet rainfall years by incorporating evenly spaced, infrequent, deep applications of water. Within the fire-prone plant removal areas, long-term, irrigation will be used to mimic normal conditions, especially during dry years or periods of protracted low rainfall.

G. As-Built Conditions

Once the implementation of the mitigation site has been completed, the Applicant will submit "As-Built" drawings to the Corps and CDFW within 45 days after completion of construction. The drawings will identify the date installation was completed and if there were any deviations from the approved Mitigation Plan.

V. MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

A. Maintenance Activities

The purpose of this program is to ensure the success of the mitigation plantings. Maintenance will occur over the five-year life of the project. The Project Biologist will monitor all aspects of the revegetation in an effort to detect any problems at an early state. Potential problems could arise from irrigation failure, erosion, vandalism, competition from weeds and invasive species, and unacceptable levels of disease and predation.

These maintenance guidelines are specifically tailored for native plant establishment. The maintenance personnel will be fully informed regarding the habitat establishment program so they understand the goals of the effort and the maintenance requirements. A landscape contractor with experience and knowledge in native plant habitat restoration will supervise all maintenance personnel.

For a period of 120 days following completion of the planting installation, the initial landscape contractor will be responsible for the care of the plantings. The purpose of the 120-day establishment period is to ensure continuity between the installation of the plant material and its short-term maintenance. The contractor's presence during this period is proven to increase project success. The contractor will control the spread of weed species and identify any efforts necessary to ensure the health and survival of the plantings.

Following the 120-day establishment period the project will be evaluated for health of plant material, and if judged satisfactory by the Project Biologist, the establishment period will be considered concluded and the long-term habitat maintenance program will begin. If plant health is not determined to be satisfactory, an additional 60 days will be allowed for the contractor to implement remedial measures. A different landscape contractor may implement this period of maintenance; however, the Project Biologist will continue to review the project's success.

Damage to plants, irrigation systems, and other facilities occurring as a result of unusual weather or vandalism will be repaired or replaced immediately.

General Maintenance
The Contractor will perform the following tasks as general maintenance duties:

- Plant Inspection;
- Weed control;
- Irrigation water volume and frequency;
- General maintenance of irrigation system;
- Trash and debris removal;
- Pest control; and
- Plant replacement.

Plant Inspection
After termination of the establishment period, the Project Biologist will inspect the mitigation site on a monthly basis for 18 months, inclusively. The plants shall be inspected on a quarterly basis thereafter until achievement of performance standards for the mitigation sites.

Weed Control
The mitigation sites shall be maintained free of weeds during the monitoring period. Weed eradication will minimize competition that could prevent the establishment of native species. All maintenance personnel will be trained to distinguish weed species from native vegetation to ensure only weedy species are removed or sprayed with herbicide.

Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of mitigation monitoring. As weeds become evident, they should be immediately removed by hand or controlled with an appropriate herbicide as determined by a licensed Pest Control Advisor (PCA). Weed debris shall be removed from the project area as accumulated and disposed of as permitted by law.

Weeds shall be manually removed before they can attain a height of three-inches (3") at intervals of not more than 30 days for the first two years of the project. All portions of the plant will be removed, including the roots. The Project Biologist shall direct the contractor regarding the selection of target weed species, their location, and the timing of weed control operations to ensure that native plants are avoided to the extent possible. Pulled weeds will be placed on a "mantilla" or other type of tarp to prevent the seeds from coming in contact with the ground.

A cleared space, 18 inches from the base of the plant, will be maintained around each container plant to minimize competition from other plant species. Mulch, two-inches thick within the watering basin, will be maintained throughout the monitoring period. Leaf and branch drop, and organic debris of native species, shall be left in place.

Irrigation Water Volume and Frequency
The Contractor shall be responsible for applying sufficient irrigation water to adequately establish new plant materials, and germinate and establish the applied seed. Irrigation water shall be applied in such a way as to encourage deep root growth (periodic deep irrigation versus frequent light irrigation). The Contractor will allow soil to dry down to approximately 50- to 60-percent of field capacity (in the top six or 10 inches after germination and during seedling establishment) before the next irrigation cycle. Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. Systems may need to be on for as long as six to eight hours at a time in order to get complete water penetration to the lower soil horizons to encourage deep root growth. A soil probe or shovel shall be used to examine soil moisture and rooting depth directly.

General Maintenance of Irrigation System
The Contractor will be responsible for the regular maintenance and repair of all aspects of the irrigation system. Poorly functioning or non-functioning parts shall be replaced immediately so as to not endanger the plantings.

General system checks shall be conducted no less than weekly for the first month after installation to assure the system is functioning correctly, and monthly thereafter, except during periods when the irrigation system is not in operation as recommended by the Project Biologist.

Any erosion or slippage of soil caused by the contractor’s inadequate maintenance or operation of irrigation facilities shall be repaired by the contractor at his/her expense.

Trash and Debris Removal
The mitigation site shall be well maintained in order to deter vandalism and dumping of trash. The Contractor is responsible for avoiding impacts to plantings during trash removal activities. Contractor shall, during daily routine maintenance, manually remove weeds, liter, trash, and

debris from the mitigation site and dispose of off-site as permitted by law. Dead limbs and tree fall shall be left in place in the revegetation areas.

Pest Control
Young trees and shrubs will be monitored for signs of disease, insect and/or predator damage, and treated as necessary. Badly damaged plants will be pruned to prevent spreading of the pestilence or replaced in kind if removed. Excessive foraging by predators may necessitate protective screening around plants and/or poison baiting of the predators. The Project Biologist will be consulted on any pest control measures to be implemented.

The Contractor shall be responsible for maintaining a non-native rodent-free project. All measures to eradicate non-native rodents must be as directed by a licensed pest control consultant.

Plant Replacement
The installation contractor will be responsible for replacing all container stock plants terminally diseased or dead during the establishment period. The long-term maintenance contractor will thereafter replace all dead and/or declining plants in the winter months as recommended by the Project Biologist. Replacement plants shall be furnished and planted by the Contractor.

Replacement plants shall conform to the species, size requirements, and spacing as specified for the plants being replaced. The replacement plants shall be purchased from inventory at the same native plant nursery as were the contract-grown plant stock.

Fertilization
If nutrient deficiencies are observed during site monitoring, the Project Biologist may specify applications of slow-release pellet fertilizer or soil amendments to speed initial growth or as a remedial measure. These applications shall occur at the onset of the rainy season following the manufacturer’s recommendations. Fertilizer will not be applied other than under the direction of the Project Biologist.

Pruning
No pruning is necessary unless otherwise specified by the Project Biologist. Dead wood shall be left on trees or where it has fallen as it plays an important role in habitat creation and soil formation. A small amount of selective trimming of native species (e.g. willow, oak and sycamore) is allowed to prevent overspray of herbicide from reaching these branches, but only as provided within the conditions of the CDFW Streambed Alteration Agreement. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches DBH shall require specific notice to and consultation with CDFW.

Staking of Trees
Staking of trees is to be avoided unless determined necessary by the Project Biologist. All stakes shall be removed before the completion of the five-year monitoring period, or earlier as determined by the Project Biologist. All stakes shall be removed by the contractor and disposed of off-site in a legal manner.

B. Responsible Parties

The Applicant/Permittee will be responsible for financing and carrying out maintenance activities.

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

C. Maintenance Schedule

The mitigation maintenance and monitoring program will begin prior to or concurrent with the construction process and continue for five years following the completion of plant installation or until performance criteria are met. Table 8 below indicates the schedule of maintenance inspections.

TABLE 8
MAINTENANCE SCHEDULE

Maintenance Task	Year				
	1	2	3	4	5
Plant Inspection	Monthly first 12 months	Monthly through 18th month; quarterly thereafter	Quarterly	Quarterly	Quarterly
Irrigation System Inspection	Monthly, or more frequently if required	Monthly	As Required	N/A	N/A
Trash and Debris Removal	Monthly	Quarterly	Quarterly	Quarterly	Quarterly
Weed Control	Minimum of Monthly	Monthly	Quarterly	Quarterly	Quarterly
Pest Control	Monthly	Bi-monthly	Quarterly	Quarterly	Quarterly
Plant Replacement	Annually	Annually	Annually	Annually	Annually
Fertilization (if necessary)	Annually	Annually	N/A	N/A	N/A

VI. MONITORING PLAN FOR THE COMPENSATORY MITIGATION SITES

A. Performance Standards for Target Dates and Success Criteria

Performance Standards are based on the stated goals of the program and the design of the mitigation site. This mitigation program considers the habitat functions of both the jurisdiction to be impacted and proposed mitigation jurisdiction to confirm that the functions of the replacement mitigation equal or exceed those of existing Corps and CDFW jurisdiction.

It should be noted that Blue Mud Canyon is unique and unusual in terms of floral species composition, even relative to the other drainages within the study area, and as such no appropriate reference site is available for comparison.

All plantings shall have a minimum of 80-percent survival, by species, the first year and 100-percent survival thereafter and/or shall attain 50-percent cover after 3 years and 70-percent cover after 5 years for the life of the project. Prior to the mitigation site(s) being determined successful, they shall be entirely without supplemental irrigation for a minimum of 2 years. Throughout the monitoring period, no single species shall constitute more than 50-percent of the vegetative cover, no woody invasive species shall be present, and herbaceous invasive species shall not exceed 5-percent. If the survival and cover requirements have not been met, the Contractor is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

1. Monitoring Plan for Southern Willow Scrub and Coast Live Oak-Walnut Riparian Mitigation Sites

First-Year Monitoring

Success Standard: A minimum of 30-percent coverage by native species;
100-percent of proposed canopy species present;
50-percent of proposed understory present
No greater than 40-percent coverage by non-native species.

Second-Year Monitoring

Success Standard: A minimum of 40-percent coverage by native species;
100-percent of proposed canopy species present
60-percent of proposed understory present
No greater than 25- percent coverage by non-native species.

Third-Year Monitoring

Success Standard: A minimum of 50-percent coverage by native species;
100-percent of proposed canopy species present
60-percent of proposed understory present
No greater than 15- percent coverage by non-native species;

Fourth-Year Monitoring

Success Standard: A minimum of 60-percent coverage by native species;
100-percent of proposed canopy species present
75-percent of proposed understory present
No greater than 10- percent coverage by non-native species;

Fifth-Year Monitoring

Success Standard: A minimum of 70-percent coverage by native species;
100-percent of proposed canopy species present
85-percent of proposed understory present
No greater than 5- percent coverage by non-native species with zero tolerance for species considered highly invasive by Cal-IPC

Diversity of Vegetation

To avoid a monoculture or limited species diversity within the established habitat, a minimum of six species native to the target habitat types must represent 0.5-percent (each) of the total vegetational composition within the revegetation areas, with no single species representing over 75-percent composition. The low percentage representation is due to the expectation that this diversity will be provided by native herbs that would not normally represent a significant percentage of total vegetation cover in a mature habitat. In addition, the total percent composition of all non-native species cannot exceed 5-percent.

Survivorship of Container Stock

During annual quantitative monitoring, the Project Biologist shall determine survivorship of tree, shrub, and herb strata container stock. In each year of monitoring, container stock survivorship must be at least 80-percent. Recruitment of native species will compensate for lack of survivorship for planted species.

Functionality as Wildlife Habitat

While conducting qualitative surveys, the Project Biologist will record wildlife observations within the revegetated habitat. The development of quantitative measures for wildlife use is not necessary for this mitigation site, but general impressions of wildlife usage of any restoration area should be considered among the success criteria.

Native Plant Recruitment

Evidence of native plant recruitment from year to year is another example of the successful creation of a functional, self-sustaining habitat. Noted recruitment would be considered a satisfied success criterion.

Probability of Continued Habitat Progression

The qualitative monitoring will provide the Project Biologist with an opportunity to evaluate the progression of the revegetation sites towards maturity. This determination will be used to support a final decision as to whether the revegetation effort has been successful. If several of the above criteria have not been met, but the site is clearly nearing satisfaction of those criteria, the Project Biologist may suggest that the Corps and CDFW accept the mitigation as completed based on his/her conclusion of continuing habitat progression.

B. <u>Target Hydrological Regime</u>

Hydrological contribution to the mitigation site will originate as direct precipitation that will drain directly to the site, providing for seasonal ponding during the rainy season. Hydrological input is also expected to consist of runoff from bordering areas. The enhanced hydrology within the mitigation site is expected to provide for dynamic storage of surface water, short-term storage of surface water, dissipation of energy, moderation of groundwater flow, nutrient cycling, removal of imported elements and compounds, retention of particulates, and export of organic carbon.

The mitigation plantings will initially be supported by a temporary irrigation system until gradually weaned, with the exception of long-term management associated with the fire-prone plant removal areas that overlap with the 5.30-acre mitigation areas that will be subject to long-term irrigation as determined appropriate for public safety. Irrigation water will be supplied via a potable water system piped into the mitigation site.

C. Monitoring Methods

Monitoring will assess the attainment of annual and final success criteria and identify the need to implement contingency measures in the event of failure. Monitoring methods include an annual tally of dead and/or declining plant stock, and visual estimates of cover as well as field sampling techniques that are based in accordance with the methodology developed by the California Native Plant Society (CNPS).[3] Please refer to *A Manual of California Vegetation* for further details on this sampling method.

Sampling Techniques for Vegetation Cover and Diversity
Percent canopy cover of the mitigation plantings will be measured by using the point-intercept sampling method centered in a 2-meter by 50-meter plot. At each 0.5-meter interval along each transect (beginning at the 50-cm mark and ending at 50-meter), a point is projected vertically into the vegetation. Each plant species intercepted by a point is recorded, providing a tally of hits for each species in the herbaceous, shrub, and tree canopies, making it possible to record more than 100 hits in any 50-meter transect. Percent cover for each species, according to vegetation layer (herb, shrub, and tree) can be calculated from these data. A list of all additional species within the 250 square-meter belt is subsequently made.

Two 2-meter by 50-meter long transects per acre will be used to monitor the development of the revegetation. The various transects will be randomly located for the first sampling event and permanently marked to facilitate their use in subsequent years. A sample of a proposed transect data sheet is provided in Appendix B.

Photo-Documentation
Permanent stations for photo-documentation will be established during the first annual monitoring event. Photos shall be taken each monitoring period from the same vantage point and in the same direction each year, and shall reflect material discussed in the annual monitoring report. Qualified habitat restoration specialists, biologists, or horticulturists with appropriate credentials and experience in native habitat restoration shall perform monitoring. Continuity within the personnel and methodology of monitoring shall be maintained insofar as possible to ensure comparable assessments.

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[3] Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society.

D. Monitoring Schedule

Qualitative Monitoring

The Project Biologist will conduct qualitative monitoring surveys on a monthly basis for the first 18 months, and quarterly thereafter until performance standards are met. Qualitative surveys, consisting of a general site walkover and habitat characterization, will be completed during each monitoring visit. General observations, such as fitness and health of the planted species, pest problems, weed establishment, mortality, and drought stress, will be noted in each site walkover. The Project Biologist will also note observations on wildlife use and native plant recruitment for the purpose of later discussion in the annual reports. Records will be kept of mortality and other problems such as insect damage, weed infestation, and soil loss. The Project Biologist will determine remedial measures necessary to facilitate compliance with performance standards. All remedial measures undertaken will be referenced in the annual monitoring report to the Corps, USFWS, and CDFW.

E. Annual Monitoring Reports

An annual report shall be submitted to the Corps, USFWS, and CDFW by Jan. 1 of each year for 5 years after planting. Photos from designated photo stations shall be included.

The Project Biologist or other qualified wildlife biologist shall survey the mitigation site to monitor the recovery of wildlife and aquatic resources in the area following construction. Monitoring of wildlife and aquatic resources shall be done in summer and winter of each year, through the term of mitigation monitoring, and the results and analysis shall be submitted with the report specified above.

At the end of each of the five monitoring period growing seasons, for the duration of the monitoring period, an annual report will be prepared for submittal to the Corps, USFWS, and CDFW. Since planting may not occur when planned, monitoring shall be tied to the actual implementation date (e.g., the first annual report shall be delivered on January 1st of the year following the first growing season after planting). These reports shall include the survival, percent cover, and height by species of both trees and shrubs, the number by species of plants replaced, an overview of the revegetation and exotic plant control efforts, and the method used to assess these parameters shall also be included. These reports will assess both attainment of yearly target success criteria and progress toward final success criteria. These reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year
- A copy of the Corps permit and any attachments including Special Conditions and subsequent Letters of Modification, as well as the Biological Opinion
- A copy of the CDFW Streambed Alteration Agreement and any subsequent Amendments

- A vicinity map indicating location of the mitigation site
- A mitigation site map identifying habitat types, transect locations, photo station locations, etc. as appropriate
- Copies of all monitoring photographs
- Copies of all completed field data sheets
- An analysis of all qualitative and quantitative monitoring data.

VII. COMPLETION OF COMPENSATORY MITIGATION

A. Notification of Completion

The Contractor should notify the Applicant/Permittee, the Corps, USFWS, and CDFW in writing when the monitoring period is complete and the Corps-approved success criteria have been met. A formal jurisdictional delineation of areas rehabilitated, established, or preserved shall be submitted to the Corps, USFWS, and CDFW.

B. Final Success Criteria Resolution

If the project meets all success criteria at the end of the five-year monitoring period, the revegetation will be considered a success. If not, the maintenance and monitoring program will be extended one full year at a time, and a specific set of remedial measures approved by the Corps, UCFWS, and CDFW will be implemented until the standards are met. Only those areas that fail to meet the success criteria will require additional monitoring. This process will continue until all year-five standards are met or until the Corps, USFWS, and CDFW determine that other revegetation measures are appropriate.

Final success criteria will not be considered to have been met until a minimum of three years (see p. 22, Irrigation Plan) after all human support, including artificial irrigation, has ceased. Should the revegetation effort meet all goals prior to the end of the five-year monitoring period, the Corps, USFWS, and CDFW, at their discretion, may terminate the monitoring effort and release the bond. At that time the Applicant/Permittee will be released from further maintenance and monitoring requirements of the mitigation area.

If, during the monitoring period, a destructive natural occurrence does occur which damages or destroys the mitigation planting, and if the mitigation planting was documented to have been proceeding well toward establishment, then reconstruction and replanting will not be required. However, if the mitigation site fares significantly worse than the surrounding natural communities in this same natural disaster, then the mitigation site would be considered to have not established itself, and reconstruction, replanting, and monitoring would continue.

C. Agency Confirmation

Following receipt of the final annual monitoring report, the Corps, USFWS, and CDFG will contact the Applicant as soon as possible to schedule a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation will not be considered complete without an onsite inspection by a Corps, USFWS, and CDFW project manager and written confirmation that approved success criteria have been achieved.

It is therefore critical that agency staff review annual reports on a timely basis and provide comments throughout the maintenance and monitoring program so that any project deficiencies they note can be addressed prior to the expected end of the program.

VIII. CONTINGENCY MEASURES

A. Initiating Procedures

If a performance standard is not met for all or any portion of the mitigation project in any year, or if the approved success criteria are not met, the Project Biologist will prepare an analysis of the cause(s) of failure and, if determined necessary by the Corps, USFWS, and CDFW, propose remedial actions for approval. If the compensatory mitigation site has not met one or more of the success criteria or performance standards, the responsible party's maintenance and monitoring obligations shall continue until the Corps, USFWS, and CDFW gives final approval the mitigation obligations have been satisfied. It is therefore incumbent upon the Project Biologist to foresee project deficiencies as part of the monitoring program and take appropriate steps to address the situation.

B. Alternative Locations for Contingency Mitigation

Sufficient area for establishment of the mitigation site is available so alternative locations would be unnecessary. Although this plan is expected to be successful, both onsite and off-site alternative locations may be used in the event that revegetation cannot be achieved.

C. Funding Mechanism

The Applicant/Permittee will fund planning, implementation, maintenance and monitoring of any contingency measures that may be required to achieve mitigation goals through an up-front payment to the Contractor. Thereafter, all expenses in implementing this mitigation plan are to be borne by the Contractor.

D. Responsible Parties

The Applicant/Permittee will be responsible for implementing, maintaining, and monitoring any contingency procedures.

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

IX. LONG-TERM MANAGEMENT PLAN AND ASSOCIATED FUNDING

Upon completion of and acceptance by the Resource Agencies that the five-year performance standards have been achieved for Blue Mud Canyon, implementation of a Long-Term Management Plan (LTMP) will begin. With the successful completion of the mitigation and the achievement of the performance standards, it is expected that the areas will require only limited management activities that would include the following:

(1) Ongoing Monitoring,
(2) Ongoing Non-Native Invasive Vegetation Control,
(3) Ongoing Removal of Fire-Prone Species,
(4) Trash and Debris Removal

A. Monitoring Tasks

A qualified Biological Monitor shall be retained to assist in implementing the LTMP and to monitor the status of the LTMP for Drainages Blue Mud Canyon. The activities to be conducted by the Biological Monitor are as follows.

Activity: Annual Monitoring. Conduct annual monitoring of the LTMA to determine what management activities are needed and where to focus those activities.

Activity: Work Planning. Prepare an annual work plan and coordinate with the maintenance contractor(s) to carry out the management activities including the need for non-native species removal, trash and debris removal, or other management activities.

Activity: Data Collection. Document qualitative and quantitative data related to the implementation of management activities

Activity: Annual Reporting. At the end of the first year, and then every other year, a management report will be prepared by the Biological Monitor and will be submitted to the Agencies upon request. These reports will include:

(a) A description of the maintenance activities conducted during that calendar year;

(b) The date of and location where the management activities were undertaken;

(c) Information regarding weed eradication/abatement, including the amount removed and treated, frequency and timing of removal and treatment, and disposal specifics; and

(d) Photos from designated photo stations.

B. Funding and Prioritizing Tasks

1. Funding

Prior to impacts within Corps or CDFW jurisdiction, the amount of a non-wasting endowment will be determined that will be necessary to fund the annual cost of carrying out the LTMP activities described above, if approved by the Corps. If approved by the Corps, the endowment will fund all management and monitoring activities associated with the LTMP. No further monetary obligations will be required of the Manager or any future long-term manager.

The endowment shall be approved by the Agencies or designee (if approved by the CDFW Director). If a designee is approved to hold the endowment, the Agencies will require the entity to enter into an agreement that contains terms relating to management of the endowment, the periodic auditing and reporting of expenditures, earnings and other pertinent information, and provisions for the transfer of the endowment and unspent earnings to the Agencies, or a successor owner/manager under certain conditions. If approved by the Agencies, the Manager will transfer the total non-wasting endowment fund to the designee approved by the CDFW and Corps within one year after commencement of construction.

The endowment will be placed in an interest-bearing security for the sole purpose of carrying out the management activities described above. The Manager will have access to the interest generated by the endowment and will be able to draw on the funds throughout the year to carry out the management activities.

2. Prioritizing Tasks

The anticipated that the activities to be conducted annually will include monitoring, trash and debris removal, invasive plant control and management reporting. Invasive vegetation removal is the activity that will occur in perpetuity, but because of the dynamic nature of riparian systems, is an activity that may not need to occur every single year. Other management activities might be added as part of the adaptive management of the LTMA, but these activities are not anticipated at this time.

Each year the Manager and Biological Monitor will develop a Work Plan that prioritizes the mandatory management activities and other adaptive management activities based on natural resource conditions for that year. How the annual draw on the endowment will be spent will be determined based on this prioritized Work Plan.

Because the management needs will vary from year to year, any unspent interest would be left in the interest-bearing security and could be utilized the following year(s). This adaptive funding mechanism provides the necessary flexibility for the Manager to allocate funds toward those management activities that require attention for that particular year and to plan ahead for implementation of management activities that become necessary in the future.

PART 2: MITIGATION FOR NON-JURISDICTIONAL RESOURCES

Impacts to areas of upland California walnut woodland and blue elderberry woodland were determined to be significant in the project's Draft Environmental Impact Report (DEIR). Areas to implement the mitigation for these impacts, through the restoration of areas of California walnut woodland and blue elderberry woodland have been identified within project open space in the Blue Mud Canyon environs. As discussed below, this component of the HMMP assumes the alternative with the greatest amount of impact will be implemented, thereby ensuring that adequate area is identified for the proposed mitigation. Table 9 below summarizes the impacts associated with grading as well as impacts for fuel modification Zone B, which requires 100-percent removal of native shrubs, for each alternative:

Table 9: Combined Grading and Fuel Modification Impacts to California Walnut Woodland (CWW), and Blue Elderberry Woodland (BEW)

	Alternative 1			**Alternative 2**			**Alternative 3**		
	Grade	FMZ	Total	Grade	FMZ	Total	Grade	FMZ	Total
CWW	0.48	0.36	0.84	0.22	0.30	0.52	0.22	0.40	0.62
BEW	10.92	0.0	10.92	13.18	0.02	13.20	11.92	0.09	12.01
Total:			**11.76**			**13.72**			**12.63**

Under Alternative 1, a total of 11.76 acres (CWW and BEW) would be permanently impacted. Under Alternative 2, a total of 13.72 acres would be permanently impacted, and under Alternative 3, a total of 12.63 acres would be permanently impacted. As such, these impacts have been selected for purposes of determining required mitigation and for identifying appropriate mitigation areas. Exhibit 7 depicts up to 14.70 acres of candidate mitigation areas suitable for the woodland mitigation.

It should also be noted that the portions of the proposed mitigation site is coincident with the area proposed for removal of fire prone vegetation on the project's Conceptual Fuel Modification Plan [the relationship of the mitigation areas and area subject to removal of fire prone vegetation is depicted on Exhibit 7]. It is important to note a number of points regarding the integration of the California walnut woodland and blue elderberry woodland with the area subject to fire prone vegetation removal.

- California walnut and blue elderberries are not considered "fire prone" and existing (healthy) walnuts and elderberries will be preserved, as will other associated species such as laurel sumac and toyon;

- Within areas proposed for habitat restoration, only native species, appropriate for the California walnut and blue elderberry woodland, are proposed (see Tables 11 and 12 below);

- As noted in Tables 11 and 12 below, spacing of the large shrubs will be consistent with the spacing of these species within the existing communities onsite, and also consistent with the spacing required to ensure public safety;

- Maintenance within the areas subject to fire prone vegetation removal, will focus on non-native species and a limited number of fire-prone species that actually occur on the site.

- The area will be managed for the long-term for habitat values, while also ensuring for adequate public safety, as set forth in the long-term management section below.

I. DESCRIPTION OF THE PROJECT/IMPACT SITE

A. <u>Responsible Parties</u>

Applicant/Permittee:	Yorba Linda Estates, LLC 7114 East Stetson, Suite 350 Scottsdale, Arizona 85251 Contact: Douglas G. Wymore
Preparer of Mitigation Plan:	Glenn Lukos Associates, Inc. Contact: Tony Bomkamp 29 Orchard Lake Forest, California 92630-8300 Telephone: (949) 837-0404

B. <u>Habitat Types Subject to Impacts</u>

<u>California Walnut Woodland</u>

Prior to the 2008 Freeway Complex Fire, approximately 6.37 acres of the Study Area supported California walnut woodland. This community was observed in the southern portion of the Study Area and is largely restricted to Blue Mud Canyon and was closely associated with California sagebrush-monkeyflower scrub, blue elderberry woodland, and the coastal sage scrub/chaparral ecotone. The California walnut woodland is considered a special-status habitat by CDFW.

<u>Blue Elderberry Woodland</u>

Prior to the 2008 Freeway Complex Fire, approximately 23.88 acres of the Study Area supported blue elderberry woodland. This community was commonly observed on the lower slopes of hillsides and within the drier reaches of the riparian areas and on terraces adjacent to drainage courses.

Component species within blue elderberry woodland include blue elderberry, albeit at a low density (on average) of approximately 10 trees per acre, laurel sumac, which is often co-dominant or dominant in these areas, coyote bush, giant wild rye, poison oak, California walnut (restricted to Blue Mud Canyon and limited areas along Drainage D), sweet fennel, southern honeysuckle, poison hemlock, chaparral nightshade, and fuchsia flowered gooseberry. The blue elderberry woodland is considered a special-status habitat by CDFW.

II. OBJECTIVES OF THE COMPENSATORY MITIGATION

The objectives of the proposed habitat mitigation and monitoring program (HMMP) is to provide for full mitigation of permanent impacts for whichever alternative is selected.

A. Mitigation for Habitat Types

In order to mitigate for impacts to California walnut woodland and blue elderberry woodland, the Project Applicant has prepared this habitat mitigation and monitoring plan for blue elderberry woodland located within Blue Mud Canyon as well as adjacent to and north of Drainage D. The plan also incorporates California walnut into the plant palette to mitigate the loss of California walnut woodland as summarized in Table 10 below. The plan has been prepared by a qualified biologist. The plan includes the restoration of blue elderberry woodland and California walnut woodland and includes: replacement of blue elderberry woodland and California walnut woodland habitat at a minimum ratio of 1:1; responsibility and qualifications of the personnel to implement and supervise the plan; site selection; site preparation and planting implementation; schedule; maintenance plan/guidelines; monitoring plan; and long-term preservation. A summary of the impacts and associated 1:1 mitigation for each alternative is provided below in Table 10.

TABLE 10
Impacts and Associated Mitigation

Vegetation Types	Option 1 Impacts	Option 2 Impacts	Option 2A Impacts
Upland Areas			
California Walnut Woodland	0.84 acre	0.52 acre	0.62 acre
Blue Elderberry Woodland	10.92 acres	13.20 acres	12.01 acres
Southern Willow Scrub	0.0 acres	0.0 acres	0.0 acres
Total	**11.76 acres**	**13.72 acres**	**12.63 acres**

B. Time Lapse Between Jurisdictional Impacts and Expected Compensatory Mitigation Success

Project grading activities will commence upon receipt of permits with project impacts expected to occur immediately thereafter. Mitigation site grading, planting, and irrigation shall begin prior to or concurrent with the planned date of initiating authorized site grading. Preparation of mitigation areas, including eradication of non-native plant species encountered will be concurrent with commencement of grading.

Within one year of the completion of mitigation installation, it is expected that an immature woodland vegetative structure will exist such that insects and birds will utilize the mitigation site for foraging.

III. DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITES

A. Location and Size of the Compensatory Mitigation Site

Candidate areas of up to 14.70 acres are depicted on Exhibit 7.

B. Ownership Status

The present owners of the mitigation sites are:

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

IV. IMPLEMENTATION PLAN FOR THE COMPENSATORY MITIGATION SITES

A. Implementation Schedule

The mitigation installation contractor (herein "Contractor"), shall be responsible for site preparation, irrigation installation and mitigation plantings, which shall begin during construction activities. Compensatory mitigation designated to occur within the mitigation site shall be installed no later than one construction season after commencement of habitat disturbance.

B. Site Preparation

Site preparation shall consist of minor localized grading, clearing and controlling exotic plants, trenching and installation of underground irrigation components, removing trash and debris, preparing planting holes and doing any other work necessary to make ready the area for planting.

Mitigation Site Grading Plan
As the topography of the mitigation sites is generally satisfactory under existing conditions for establishing the mitigation site, only minimal localized grading will be necessary.

Exotic Vegetation Control
The predominance of non-native, invasive weed species throughout California has presented a challenge to most native revegetation projects. Weedy species are opportunistic, rapidly colonizing disturbed sites such as revegetation sites. This can lead to the displacement of native species if the weedy species are not properly treated. Several of these invasive species are

capable of out-competing most native understory and herbaceous plants and some can out-compete and even displace existing native trees and shrubs. Therefore, non-native vegetation including but not limited to poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), black mustard (*Brassica nigra*), summer mustard *(Hirschfeldia incana*), wild radish (*Raphanus sativa*), and non-native annual grasses such as bromes, wild oats and barley, will be removed from the mitigation site and disposed of in a manner and at a location which prevents its reestablishment. Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of the mitigation monitoring period.

One of the largest obstacles to the successful revegetation of a site is the exotic seed bank residing in the soil. This seed bank can persist for several years, or even decades, and poses one of the major threats to restoration programs. Undesirable exotic plants will be eradicated either during initial site grading or prior to site preparation. If grading precedes planting by more than a few months, it will be necessary to eradicate undesirable exotic plants that have become established prior to planting and seeding of the mitigation sites. If deemed necessary, a "grow-and-kill" cycle will be established during that period. "Grow and kill" is a cycle of applying water, germinating the non-native, invasive species and spraying with the appropriate chemical. This allows a large portion of the seed bank currently present in the soil to be removed. Eliminating or substantially reducing the competition from non-native exotics early in the life cycle of native plants helps to ensure more rapid growth and cover by the native species.

The type, quantity, and method of herbicide application will be determined by a California licensed Pest Control Advisor (PCA) who will inspect the site, write project recommendations and submit same to the Project Biologist for approval. Pesticide recommendations shall include, but are not limited to, the pesticides to be used, rates of application, methods of application, and areas to which pesticides are to be applied. A licensed Pest Control Operator (PCO) may work under the supervision of the PCA who will employ best management practices regarding the timing, quantity, and type of herbicide for each species. The PCA will determine both immediate and follow-up herbicide application for each species. No herbicides shall be used where threatened or endangered plant species occur, when wind velocities are above 5 miles per hour.

Weed control will be maintained throughout the monitoring period. Weeds will be controlled before their setting of seed. Ongoing weed control will be accomplished manually by the use of a hoe or other tool to uproot the entire plant, a mower or weed whip to cut plants, or by herbicide application as prescribed in this Mitigation Plan. Weed species identified as invasive, particularly tenacious, or those with wind-borne seed will be subject to the earliest control efforts. The Project Biologist will direct the contractor regarding the selection of target weed species, their location and the timing of weed control operations to ensure that native plants are avoided to the extent possible.

Contractor Education

Prior to the commencement of grading or any construction work, the Contractor will review all aspects of the Mitigation Plan that concern the contractors including permit requirements, site protection, maintenance inspections, landscape procedures and monitoring.

Nesting Birds
The Contractor may remove vegetation within drainages from March 1 to July 31 if a qualified biologist conducts a survey for nesting birds within three days prior to the vegetation removal and ensures no nesting birds shall be impacted by the project. These surveys shall include the areas within 200 feet of the edge of the proposed impacts. If active nests are found, a minimum 50-foot (200 feet for raptors) fence barrier shall be erected around the nest site. No habitat removal or any other work shall occur within the fenced nest zone if the nest continues active beyond July 31, until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the project. The Contractor shall submit the mapped survey results to CDFW for review and approval prior to vegetation removal to ensure full avoidance measures are in place. The Contractor will adhere to all applicable requirements of federal and state codes (e.g., Migratory Bird Treaty Act and CDFG Code 3503.5).

C. <u>Planting Plan</u>

California walnut woodland and blue elderberry woodland habitats will be rehabilitated within the proposed mitigation areas. Planting shall consist of preparing planting holes, planting container stock, installing plant protection devices, applying mulch and hydroseeding. No planting shall be done in any area until the area concerned has been prepared in accordance with the plans and presents an appearance satisfactory to the Project Biologist.

All planting should be done after the first wetting rains between October 1 and February 1 to take advantage of the winter rainy season, dormancy of foliage, and rooting period to ensure optimum survival of plantings. Should the Contractor be required to plant during other times of the year, chances of survival are diminished. To compensate for decreased survival rates, the Operator shall be required to augment the specified planting density by 25-percent to account for the likelihood of increased mortality of plantings, unless irrigation is incorporated into the restoration program. Completion of all mitigation requirements shall be concluded within two years of project implementation within target areas. Planting, maintenance, monitoring and reporting activities shall be overseen by a specialist familiar with restoration of native plants.

<u>California Walnut Woodland</u>
This plan provides for the rehabilitation of California walnut woodland based primarily on the walnut woodland composition in Blue Mud Canyon and portions of Drainage G. If a less impactful Project Alternative is selected, the mitigation will be reduced accordingly while maintaining a 1:1 ratio. The planting palette is presented in Table 11 below. It should be noted that walnuts will be mixed with blue elderberry and coast live oak, as these typically co-occur within the neighboring areas of the Chino and Puente Hills.

<u>Blue Elderberry Woodland</u>
This plan provides for the rehabilitation of blue elderberry woodland based primarily on the blue elderberry woodland composition in Blue Mud Canyon and Drainage G. The planting palette is presented in Table 12 below. It should be noted that blue elderberry will be mixed with

California walnut and coast live oak, as these typically co-occur within the neighboring areas of the Chino and Puente Hills.

In addition to the species set forth in Tables 11 and 12, the additional site-appropriate native plants that would not be subject to removal as "fire-prone" species and set forth in Table 13 may be included in the plant palettes for both the walnut and elderberry woodlands.

TABLE 11
CALIFORNIA WALNUT WOODLAND
(up to 0.84 acre to be rehabilitated)

Botanic Name	Common Name	Stock Type	Plant Spacing	No. per Acre	Percent
Canopy					
Juglans californica	California walnut	1 gal	30' o.c.	50	50%
Quercus agrifolia	Coast live oak	1 gal	50' o.c	10	10%
Sambucus nigra ssp. *caerulea*	Blue elderberry	1 gal	50' o.c.	40	40%
Subtotal				**100**	**100%**
Understory					
Heteromeles arbutifolia	Toyon	1 gal	30' o.c.	50	12.5%
Malosma laurina	Laurel sumac	Liner	30' o.c.	50	12.5%
Ribes speciosum	Fuchsia-flowered gooseberry	1 gal	30' o.c.	100	10%
Rhamnus ilicifolia	Holly-leaved redberry	1 gal	30' o.c.	100	10%
Elymus condensatus	Giant wildrye	1 gal	8' o.c.	100	10%
Mimulus aurantiacus	bush monkey flower	1 gal	12' o.c	50	5%
Stipa pulchra	Purple needlegrass	1 gal	8' o.c.	100	10%
Melica imperfecta	Coast range melic	1 gal	12' o.c.	150	15%
Baccharis pilularis	Coyote bush	1 gal	12" o.c.	100	10%
Opuntia littoralis	Prickly-pear cactus	pads	clumped	300	30%
Subtotal				**1,000**	**100%**
Total Container Stock				**1,100**	**100%**

TABLE 12 BLUE ELDERBERRY WOODLAND (up to 13.20 acres to be rehabilitated)					
Botanic Name	**Common Name**	**Stock Type**	**Plant Spacing**	**No. per Acre**	**Percent**
Canopy					
Quercus agrifolia	Coast live oak	1 gal	50' o.c.	5	10%
Sambucus nigra ssp. *caerulea*	Blue elderberry	1 gal	30' o.c.	40	80%
Juglans californica	California walnut	1 gal	30' o.c.	5	10%
Subtotal				**50**	**100%**
Understory					
Heteromeles arbutifolia	Toyon	1 gal	30' o.c.	50	5%
Malosma laurina	Laurel sumac	Liner	30' o.c.	50	5%
Ribes speciosum	Fuchsia-flowered gooseberry	1 gal	8' o.c.	100	10%
Rhamnus ilicifolia	Holly-leaved redberry	1 gal	8' o.c.	100	10%
Elymus condensatus	Giant wildrye	1 gal	clumped.	100	10%
Mimulus aurantiacus	bush monkey flower	1 gal	12' o.c	50	5%
Stipa pulchra	Purple needlegrass	1 gal	8' o.c.	100	10%
Melica imperfecta	Coast range melic	1 gal	12' o.c.	150	15%
Baccharis pilularis	Coyote bush	1 gal	12" o.c.	100	10%
Opuntia littoralis	Prickly-pear cactus	pads	clumped	200	20%
Subtotal				**1,000**	**100%**
Total Container Stock				**1,050**	**100%**

TABLE 13 Additional Optional Plant Species		
Botanic Name	**Common Name**	**Stock Type**
Herbs		
Pseudognaphalium californicum	California everlasting	1 gal
Grindelia stricta	Gum plant	1 gal
Lasthenia californica	Dwarf goldfields	1 gal
Leymus condensatus	Giant wild rye	1 gal
Mirabilis californica	Wishbone bush	1 gal
Nassella (stipa) lepidra	Foothill needlegrass	1 gal
Sisyrinchium bellum	Blue eyed grass	1 gal
Solanum xantii	Purple nightshade	1 gal
Verbena lasiostachys	Western vervain	1 gal
Shrubs		
Atriplex lentiformis ssp. *breweri*	Brewer saltbush	1 gal
Baccharis emoyi	Emory baccharis	1 gal
Baccharis pilularis ssp. *Consanguinea*	Chaparral bloom	1 gal
Brickellia californica	No common name	1 gal
Dendromecon rigida	Bush poppy	1 gal
Encelia californica	California encelia	1 gal
Epilobium canum (Zauschneria californica	Hoary California fuschia	1 gal
Eriodictycon trichocalyx	Yerba santa	1 gal

Keckiella antirrhinoides	Yellow bush penstemon	1 gal
Keckiella cordifolia	Heart leaved penstemon	1 gal
Lonicera subspicata	Wild honeysuckle	1 gal
Lotus scoparius	Deerweed	1 gal
Malacothamnus fasciculatus	Chapparal mallow	1 gal
Opuntia prolifera	Coast cholla	1 gal
Prunus ilicifolia spp. *Ilicifolia*	Holly leafed cherry	1 gal
Rhamnus californica	California coffee berry	1 gal
Rhamnus crocea	Redberry	1 gal
Rhus integrifolia	Lemonade berry	1 gal
Romneya coulteri	Matilija poppy	1 gal
Solanum douglasii	Douglas nightshade	1 gal
Trichostema lanatum	Woolly blue curls	1 gal

Source of Plant Materials
It is preferred that the source of all propagules and seed used at the mitigation site be from the site. If not available, the remainder of propagules and seed required will be from wild sources within Orange County, and collected as close to the mitigation sites as possible to preserve regional genetic integrity.

Plant material for revegetation shall be derived from cuttings, materials salvaged from disturbed areas, and/or seeds obtained from randomly selected native trees and shrubs occurring locally within Orange County or eastern Los Angeles County. Any replacement tree/shrub stock, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, be ant free and shall not be inoculated to prevent heart rot. If any materials must be obtained from other than onsite sources, the Project Biologist shall provide the County of Orange with a list of all such materials.

Contract Growing
Contract growing of all container plants shall be by a local experienced native plant nursery. Substitution of plant material at the time of planting depends solely upon the discretion of the Project Biologist. Any substitutions that are approved will be documented in the As-Built Plans.

Container Plants
One-gallon container stock, rosepots and liners shall be utilized for container stock production in order to develop vertical heterogeneity (strata). All plant materials will be inspected by the Project Biologist and approved as healthy, disease free and of proper size prior to planting. Overgrown, root-bound container stock will be rejected.

Mycorrhizal Fungi
Mycorrhizae are specialized fungi found on plant roots. A symbiotic relationship exists between plant roots and mycorrhizae wherein the plants benefit from the increased ability to take up nutrients and withstand drought when mycorrhizae are present. This relationship is essential to the growth rate, well-being, and longevity of native plant communities. Plant utilization of mycorrhizal fungi markedly increases the success of revegetation on disturbed or degraded lands.

All appropriate container-grown plants, except those known to be non-host species, shall be inoculated with mycorrhizal fungi prior to delivery to the job site.

Plant Placement

Container stock will be laid out in such a manner that mimics natural plant distribution (i.e., in clusters and islands) to emulate regional reference sites. The Project Biologist will monitor and confirm that trees and shrubs have been placed at the designed elevation relative to the water source supporting them, such as ground water. All plants shall be planted in randomly spaced, naturally clumped patterns. The average planting densities shall meet the criteria specified in Tables 11 and 12.

Planting Method for Rose Pot and/or Liner Plant Stock

Rose pot and/or liner plant stock will be placed in a hole measuring at least twice the diameter and depth of the container. The root structure will be examined and excess root material removed. The top of the rootball will be set slightly above finish grade. The planting hole will be backfilled with native soil. Fertilizer, watering basins, and mulch are not required for this planting method.

Planting Method for Container Stock

One-gallon container stock will be planted in a hole measuring at least twice the diameter of the container and twice the depth. Container stock will be thoroughly watered the day before planting. One teaspoon (0.3 oz.) of Osmocote 14-14-14 (or equal) will be placed one inch below the root zone and backfilled with native soil to proper planting depth. The container will be upended into the palm of the hand to avoid damage to the root structure and placed in the planting hole. The top of the root ball will be set one inch above finish grade. The planting hole will be backfilled with native soil.

A three-inch high, hand-compacted earth berm, approximately 36 inches in diameter, will then be constructed around each container plant. This watering basin will be maintained until the plants are no longer irrigated. Mulch will be applied as a top dressing, 2 to 3 inches thick, but must not come in contact with the stem of the plant. Container stock will be watered immediately after installation.

Pruning and Staking

There will be no pruning or staking of any vegetation. Diseased or insect-damaged foliage, if sufficient to require pruning, will serve as a benchmark for rejection of plant material.
A small amount of selective trimming of native species (e.g. willow, oak and sycamore) is allowed to prevent overspray of herbicide from reaching these branches. Native vegetation may only be trimmed; individual plants shall not be removed.

D. Irrigation Plan

The Contractor shall provide irrigation for each mitigation site when natural moisture conditions are inadequate to ensure survival of plants. Irrigation can be provided for a period of at least three years from planting. Irrigation shall be phased out during the fall/winter of third year unless unusually severe conditions threaten survival of plantings. All plants must survive and grow for at least two years without supplemental water for the restoration phase of the project to be eligible for acceptance by the County of Orange. Long-term irrigation may be incorporated into portions or all of the walnut and elderberry irrigation that would mimic natural rainfall during lower-than normal rainfall years.

Coarse mulch shall be placed around plantings to minimize water loss and discourage weed growth. Mulch shall be 3 to 4 inches deep and shall be placed in a minimum area 1.5 times the diameter of the drip line of the plant or 2 feet in diameter whichever is greater. The mulched area shall be maintained throughout the course of restoration, unless otherwise authorized in writing by the County of Orange. Mulch shall not be placed directly against the main stem of the plants.

Supplemental irrigation is to be used solely for the purpose of establishing the plants at the mitigation site and is of a temporary nature, with the caveat that supplemental irrigation may be applied during years of lower-than normal rainfall. The goal of the irrigation program is to obtain germination and growth with the least amount of irrigation. Frequent irrigation encourages weed invasion and leaches nutrients from the soil. Long-term, the use of supplemental irrigation is intended to provide subsidies during lower-than average rainfall.

The mitigation sites will be initially supported by a short-term automatic irrigation system as well as from existing water sources. Drip irrigation may be provided for trees and shrubs planted on the slopes. The container stock will be irrigated as long as necessary to establish the root systems in the native soils, probably two or three summers. The main line will be installed below-grade. All lateral lines will be installed above-grade for ease of removal and inspection. Alternatively, lateral lines may be installed below-grade at the discretion of the applicant.

The critical period for irrigation is during the first winter and early spring following planting. During this time, roots are not well established and an unseasonable drought can cause high mortality. During dry periods after plant installation, the Project Biologist, Landscape Contractor and/or the maintenance contractor will regularly inspect soil moisture. Watering during the summer dry season will occur as frequently as required. Long-term, irrigation within areas subject to fire-prone vegetation removal will be used to mimic normal conditions, especially during dry years or periods of protracted low rainfall.

E. As-Built Conditions

Once the implementation of the mitigation site has been completed, the Applicant will submit "As-Built" drawings to the County of Orange within 45 days after completion of construction. The drawings will identify the date installation was completed and if there were any deviations from the approved Mitigation Plan.

V. MAINTENANCE ACTIVITIES DURING THE MONITORING PERIOD

A. Maintenance Activities

The purpose of this program is to ensure the success of the mitigation plantings. Maintenance will occur over the five-year life of the project. The Project Biologist will monitor all aspects of the revegetation in an effort to detect any problems at an early state. Potential problems could arise from irrigation failure, erosion, vandalism, competition from weeds and invasive species, and unacceptable levels of disease and predation.

These maintenance guidelines are specifically tailored for native plant establishment. The maintenance personnel will be fully informed regarding the habitat establishment program so they understand the goals of the effort and the maintenance requirements. A landscape contractor with experience and knowledge in native plant habitat restoration will supervise all maintenance personnel.

For a period of 120 days following completion of the planting installation, the initial landscape contractor will be responsible for the care of the plantings. The purpose of the 120-day establishment period is to ensure continuity between the installation of the plant material and its short-term maintenance. The contractor's presence during this period is proven to increase project success. The contractor will control the spread of weed species and identify any efforts necessary to ensure the health and survival of the plantings.

Following the 120-day establishment period the project will be evaluated for health of plant material, and if judged satisfactory by the Project Biologist, the establishment period will be considered concluded and the long-term habitat maintenance program will begin. If plant health is not determined to be satisfactory, an additional 60 days will be allowed for the contractor to implement remedial measures. A different landscape contractor may implement this period of maintenance; however, the Project Biologist will continue to review the project's success.

Damage to plants, irrigation systems, and other facilities occurring as a result of unusual weather or vandalism will be repaired or replaced immediately.

General Maintenance
The Contractor will perform the following tasks as general maintenance duties:

- Plant Inspection;
- Weed control;
- Irrigation water volume and frequency;
- General maintenance of irrigation system;
- Trash and debris removal;
- Pest control; and
- Plant replacement.

Plant Inspection
After termination of the establishment period, the Project Biologist will inspect the mitigation site on a monthly basis for 18 months, inclusively. The plants shall be inspected on a quarterly basis thereafter until achievement of performance standards for the mitigation sites.

Weed Control
The mitigation sites shall be maintained free of weeds during the monitoring period. Weed eradication will minimize competition that could prevent the establishment of native species. All maintenance personnel will be trained to distinguish weed species from native vegetation to ensure only weedy species are removed or sprayed with herbicide.

Removal shall be done at least twice annually during the spring/summer season, as needed, through the term of mitigation monitoring. As weeds become evident, they should be immediately removed by hand or controlled with an appropriate herbicide as determined by a licensed Pest Control Advisor (PCA). Weed debris shall be removed from the project area as accumulated and disposed of as permitted by law.

Weeds shall be manually removed before they can attain a height of three-inches (3") at intervals of not more than 30 days for the first two years of the project. All portions of the plant will be removed, including the roots. The Project Biologist shall direct the contractor regarding the selection of target weed species, their location, and the timing of weed control operations to ensure that native plants are avoided to the extent possible. Pulled weeds will be placed on a "mantilla" or other type of tarp to prevent the seeds from coming in contact with the ground.

A cleared space, 18 inches from the base of the plant, will be maintained around each container plant to minimize competition from other plant species. Mulch, two-inches thick within the watering basin, will be maintained throughout the monitoring period. Leaf and branch drop, and organic debris of native species, shall be left in place.

Irrigation Water Volume and Frequency
The Contractor shall be responsible for applying sufficient irrigation water to adequately establish new plant materials, and germinate and establish the applied seed. Irrigation water shall be applied in such a way as to encourage deep root growth (periodic deep irrigation versus frequent light irrigation). The Contractor will allow soil to dry down to approximately 50- to 60-percent of field capacity (in the top six or 10 inches after germination and during seedling establishment) before the next irrigation cycle. Wetting of the full root zone and drying of the soil between irrigation events is essential to the maintenance of the plants and the promotion of a deep root zone that will support the vegetation in the years after establishment. Systems may need to be on for as long as six to eight hours at a time in order to get complete water penetration to the lower soil horizons to encourage deep root growth. A soil probe or shovel shall be used to examine soil moisture and rooting depth directly. Irrigation following the initial five-year monitoring and maintenance period is discussed below under long-term irrigation.

General Maintenance of Irrigation System
The Contractor will be responsible for the regular maintenance and repair of all aspects of the irrigation system. Poorly functioning or non-functioning parts shall be replaced immediately so as to not endanger the plantings.

General system checks shall be conducted no less than weekly for the first month after installation to assure the system is functioning correctly, and monthly thereafter, except during periods when the irrigation system is not in operation as recommended by the Project Biologist.

Any erosion or slippage of soil caused by the contractor's inadequate maintenance or operation of irrigation facilities shall be repaired by the contractor at his/her expense.

Trash and Debris Removal
The mitigation site shall be well maintained in order to deter vandalism and dumping of trash. The Contractor is responsible for avoiding impacts to plantings during trash removal activities. Contractor shall, during daily routine maintenance, manually remove weeds, liter, trash, and debris from the mitigation site and dispose of off-site as permitted by law. Dead limbs and tree fall shall be left in place in the revegetation areas.

Pest Control
Young trees and shrubs will be monitored for signs of disease, insect and/or predator damage, and treated as necessary. Badly damaged plants will be pruned to prevent spreading of the pestilence or replaced in kind if removed. Excessive foraging by predators may necessitate protective screening around plants and/or poison baiting of the predators. The Project Biologist will be consulted on any pest control measures to be implemented.

The Contractor shall be responsible for maintaining a non-native rodent-free project. All measures to eradicate non-native rodents must be as directed by a licensed pest control consultant.

Plant Replacement
The installation contractor will be responsible for replacing all container stock plants terminally diseased or dead during the establishment period. The long-term maintenance contractor will thereafter replace all dead and/or declining plants in the winter months as recommended by the Project Biologist. Replacement plants shall be furnished and planted by the Contractor.

Replacement plants shall conform to the species, size requirements, and spacing as specified for the plants being replaced. The replacement plants shall be purchased from inventory at the same native plant nursery as were the contract-grown plant stock.

Fertilization
If nutrient deficiencies are observed during site monitoring, the Project Biologist may specify applications of slow-release pellet fertilizer or soil amendments to speed initial growth or as a remedial measure. These applications shall occur at the onset of the rainy season following the manufacturer's recommendations. Fertilizer will not be applied other than under the direction of the Project Biologist.

Pruning
No pruning is necessary unless otherwise specified by the Project Biologist. Dead wood shall be left on trees or where it has fallen as it plays an important role in habitat creation and soil formation. A small amount of selective trimming of native species is allowed to prevent overspray of herbicide from reaching these branches. Native vegetation may only be trimmed; individual plants shall not be removed.

Staking of Trees
Staking of trees is to be avoided unless determined necessary by the Project Biologist. All stakes shall be removed before the completion of the five-year monitoring period, or earlier as determined by the Project Biologist. All stakes shall be removed by the contractor and disposed of off-site in a legal manner.

B. Responsible Parties

The Applicant/Permittee will be responsible for financing and carrying out maintenance activities.

Applicant/Permittee: Yorba Linda Estates, LLC
7114 East Stetson, Suite 350
Scottsdale, Arizona 85251
Contact: Douglas G. Wymore

C. Maintenance Schedule

The mitigation maintenance and monitoring program will begin prior to or concurrent with the construction process and continue for five years following the completion of plant installation or until performance criteria are met. Table 14 below indicates the schedule of maintenance inspections.

TABLE 14 MAINTENANCE SCHEDULE					
Maintenance Task	**Year**				
	1	2	3	4	5
Plant Inspection	Monthly first 12 months	Monthly through 18th month; quarterly thereafter	Quarterly	Quarterly	Quarterly
Irrigation System Inspection	Monthly, or more frequently if required	Monthly	As Required	N/A	N/A
Trash and Debris Removal	Monthly	Quarterly	Quarterly	Quarterly	Quarterly
Weed Control	Minimum of Monthly	Monthly	Quarterly	Quarterly	Quarterly
Pest Control	Monthly	Bi-monthly	Quarterly	Quarterly	Quarterly
Plant Replacement	Annually	Annually	Annually	Annually	Annually
Fertilization (if necessary)	Annually	Annually	N/A	N/A	N/A

VI. MONITORING PLAN FOR THE COMPENSATORY MITIGATION SITES

A. Performance Standards for Target Dates and Success Criteria

Performance Standards are based on the stated goals of the program and the design of the mitigation site.

It should be noted that Blue Mud Canyon is not fully characteristic on the site for floral species composition, even relative to the other drainages within the study area, and as such no appropriate reference site is available for comparison.

All plantings shall have a minimum of 80-percent survival, by species, the first year and 100-percent survival thereafter and/or shall attain -percent cover after 3 years and 90-percent cover after 5 years for the life of the project. Prior to the mitigation site(s) being determined successful, they shall be entirely without supplemental irrigation for a minimum of 2 years. Throughout the monitoring period, no single species shall constitute more than 50-percent of the vegetative cover, no woody invasive species shall be present, and herbaceous invasive species shall not exceed 5-percent. If the survival and cover requirements have not been met, the Contractor is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements for 5 years after planting.

1. Monitoring Plan for California Walnut Woodland and Blue Elderberry Woodland Mitigation Sites

First-Year Monitoring

Success Standard: A minimum of 20-percent coverage by native species;
100-percent of proposed canopy species present;
30-percent of proposed understory present
No greater than 50-percent coverage by non-native species.

Second-Year Monitoring

Success Standard: A minimum of 30-percent coverage by native species;
100-percent of proposed canopy species present
40-percent of proposed understory present
No greater than 25- percent coverage by non-native species.

Third-Year Monitoring

Success Standard: A minimum of 40-percent coverage by native species;
100-percent of proposed canopy species present
50-percent of proposed understory present
No greater than 15- percent coverage by non-native species;

Fourth-Year Monitoring

Success Standard: A minimum of 55-percent coverage by native species;
100-percent of proposed canopy species present
60-percent of proposed understory present
No greater than 10- percent coverage by non-native species;

Fifth-Year Monitoring

Success Standard: A minimum of 70-percent coverage by native species;
100-percent of proposed canopy species present
80-percent of proposed understory present
No greater than 5- percent coverage by non-native species with zero tolerance for species considered highly invasive by Cal-IPC.

Diversity of Vegetation

To avoid a monoculture or limited species diversity within the established habitat, a minimum of six species native to the target habitat types must represent 0.5-percent (each) of the total vegetational composition within the revegetation areas, with no single species representing over 75-percent composition. The low percentage representation is due to the expectation that this diversity will be provided by native herbs that would not normally represent a significant percentage of total vegetation cover in a mature habitat. In addition, the total percent composition of all non-native species cannot exceed 5-percent.

Survivorship of Container Stock
During annual quantitative monitoring, the Project Biologist shall determine survivorship of tree, shrub, and herb strata container stock. In each year of monitoring, container stock survivorship must be at least 80-percent.

Functionality as Wildlife Habitat
While conducting qualitative surveys, the Project Biologist will record wildlife observations within the revegetated habitat. The development of quantitative measures for wildlife use is not necessary for this mitigation site, but general impressions of wildlife usage of any restoration area should be considered among the success criteria.

Native Plant Recruitment
Evidence of native plant recruitment from year to year is another example of the successful creation of a functional, self-sustaining habitat. Noted recruitment would be considered a satisfied success criterion. Fire prone species will be removed annually, while still in the seedling or sapling state.

Probability of Continued Habitat Progression
The qualitative monitoring will provide the Project Biologist with an opportunity to evaluate the progression of the revegetation sites towards maturity. This determination will be used to support a final decision as to whether the revegetation effort has been successful. If several of the above criteria have not been met, but the site is clearly nearing satisfaction of those criteria, the Project Biologist may suggest that the County of Orange accept the mitigation as completed based on his/her conclusion of continuing habitat progression.

B. Monitoring Methods

Monitoring will assess the attainment of annual and final success criteria and identify the need to implement contingency measures in the event of failure. Monitoring methods include an annual tally of dead and/or declining plant stock, and visual estimates of cover as well as field sampling techniques that are based in accordance with the methodology developed by the California Native Plant Society (CNPS).[4] Please refer to *A Manual of California Vegetation* for further details on this sampling method.

Sampling Techniques For Vegetation Cover and Diversity
Percent canopy cover of the mitigation plantings will be measured by using the point-intercept sampling method centered in a 2-meter by 50-meter plot. At each 0.5-meter interval along each transect (beginning at the 50-cm mark and ending at 50-meter), a point is projected vertically into the vegetation. Each plant species intercepted by a point is recorded, providing a tally of hits for each species in the herbaceous, shrub, and tree canopies, making it possible to record more than 100 hits in any 50-meter transect. Percent cover for each species, according to vegetation layer (herb, shrub, and tree) can be calculated from these data. A list of all additional species within the 250 square-meter belt is subsequently made.

[4] Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society.

Two 2-meter by 50-meter long transects per acre will be used to monitor the development of the revegetation. The various transects will be randomly located for the first sampling event and permanently marked to facilitate their use in subsequent years. A sample of a proposed transect data sheet is provided in Appendix B.

Photo-Documentation

Permanent stations for photo-documentation will be established during the first annual monitoring event. Photos shall be taken each monitoring period from the same vantage point and in the same direction each year, and shall reflect material discussed in the annual monitoring report. Qualified habitat restoration specialists, biologists, or horticulturists with appropriate credentials and experience in native habitat restoration shall perform monitoring. Continuity within the personnel and methodology of monitoring shall be maintained insofar as possible to ensure comparable assessments.

C. Monitoring Schedule

Qualitative Monitoring

The Project Biologist will conduct qualitative monitoring surveys on a monthly basis for the first 18 months, and quarterly thereafter until performance standards are met. Qualitative surveys, consisting of a general site walkover and habitat characterization, will be completed during each monitoring visit. General observations, such as fitness and health of the planted species, pest problems, weed establishment, mortality, and drought stress, will be noted in each site walkover. The Project Biologist will also note observations on wildlife use and native plant recruitment for the purpose of later discussion in the annual reports. Records will be kept of mortality and other problems such as insect damage, weed infestation, and soil loss. The Project Biologist will determine remedial measures necessary to facilitate compliance with performance standards. All remedial measures undertaken will be referenced in the annual monitoring report to the County of Orange.

D. Annual Monitoring Reports

An annual report shall be submitted to the County of Orange. Photos from designated photo stations shall be included.

The Project Biologist or other qualified wildlife biologist shall survey the mitigation site to monitor the recovery of wildlife and aquatic resources in the area following construction. Monitoring of wildlife and aquatic resources shall be done in summer and winter of each year, through the term of mitigation monitoring, and the results and analysis shall be submitted with the report specified above.

At the end of each of the five monitoring period growing seasons, for the duration of the monitoring period, an annual report will be prepared for submittal to the County of Orange. Since planting may not occur when planned, monitoring shall be tied to the actual implementation date (e.g., the first annual report shall be delivered on January 1st of the year following the first growing season after planting). These reports shall include the survival, percent cover, and height by species of both trees and shrubs, the number by species of plants replaced, an overview of the revegetation and exotic plant control efforts, and the method used to assess these parameters shall also be included. These reports will assess both attainment of yearly target success criteria and progress toward final success criteria. These reports will also include the following:

- A list of names, titles, and companies of all persons who prepared the content of the annual report and participated in monitoring activities for that year;
- A vicinity map indicating location of the mitigation site;
- A mitigation site map identifying habitat types, transect locations, photo station locations, etc. as appropriate;
- Copies of all monitoring photographs;
- Copies of all completed field data sheets; and
- An analysis of all qualitative and quantitative monitoring data.

VII. COMPLETION OF COMPENSATORY MITIGATION

A. Notification of Completion

The Contractor should notify the Applicant/Permittee and the County of Orange in writing when the monitoring period is complete and the success criteria have been met.

B. Final Success Criteria Resolution

If the project meets all success criteria at the end of the five-year monitoring period, the revegetation will be considered a success. If not, the maintenance and monitoring program will be extended one full year at a time, and a specific set of remedial measures approved by the County of Orange will be implemented until the standards are met. Only those areas that fail to meet the success criteria will require additional monitoring. This process will continue until all year-five standards are met or until the County of Orange determines that other revegetation measures are appropriate.

Final success criteria will not be considered to have been met until a minimum of three years after all human support, including artificial irrigation, has ceased. Should the revegetation effort meet all goals prior to the end of the five-year monitoring period, the County of Orange, at their discretion, may terminate the monitoring effort and release the bond. At that time the Applicant/Permittee will be released from further maintenance and monitoring requirements of the mitigation area.

If, during the monitoring period, a destructive natural occurrence does occur which damages or destroys the mitigation planting, and if the mitigation planting was documented to have been proceeding well toward establishment, then reconstruction and replanting will not be required.

However, if the mitigation site fares significantly worse than the surrounding natural communities in this same natural disaster, then the mitigation site would be considered to have not established itself, and reconstruction, replanting, and monitoring would continue.

C. Agency Confirmation

Following receipt of the final annual monitoring report, the County of Orange will contact the Applicant as soon as possible to schedule a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation will not be considered complete without an onsite inspection by a County of Orange project manager and written confirmation that approved success criteria have been achieved.

It is therefore critical that agency staff review annual reports on a timely basis and provide comments throughout the maintenance and monitoring program so that any project deficiencies they note can be addressed prior to the expected end of the program.

VIII. CONTINGENCY MEASURES

A. Initiating Procedures

If a performance standard is not met for all or any portion of the mitigation project in any year, or if the approved success criteria are not met, the Project Biologist will prepare an analysis of the cause(s) of failure and, if determined necessary by the County of Orange, propose remedial actions for approval. If the compensatory mitigation site has not met one or more of the success criteria or performance standards, the responsible party's maintenance and monitoring obligations shall continue until the County of Orange gives final approval the mitigation obligations have been satisfied. It is therefore incumbent upon the Project Biologist to foresee project deficiencies as part of the monitoring program and take appropriate steps to address the situation.

B. Alternative Locations for Contingency Mitigation

Sufficient area for establishment of the mitigation site is available so alternative locations would be unnecessary. Although this plan is expected to be successful, both onsite and off-site alternative locations may be used in the event that revegetation cannot be achieved.

C. Funding Mechanism

The Applicant/Permittee will fund planning, implementation, maintenance and monitoring of any contingency measures that may be required to achieve mitigation goals through an up-front payment to the Contractor. Thereafter, all expenses in implementing this mitigation plan are to be borne by the Contractor.

D. Responsible Parties

The Applicant/Permittee will be responsible for implementing, maintaining, and monitoring any contingency procedures.

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IX. LONG-TERM MANAGEMENT AND MAINTENANCE

Following successful completion of the five-year monitoring and maintenance period, the mitigation area would be subject to the long-term monitoring and maintenance provisions set forth below. The goal of the long-term management and maintenance is two-fold: to manage the area for long-term habitat goals, specifically the long-term health and function of the California walnut woodland and blue elderberry woodland, while also managing the area for public safety. These two goals are not in conflict; rather, it implemented correctly, the two goals can be complementary such that both goals are achieved.

A. Responsible Parties

The Homeowner's Association (HOA) will be responsible for implementation of the long-term maintenance and monitoring for the California walnut woodland and blue elderberry woodland mitigation areas.

B. Baseline Conditions

The Baseline conditions for the long-term management will be established by the fifth and final monitoring report submitted to the County of Orange that documents compliance with the five-year monitoring requirements set forth above. The final composition of the target native communities established as part of the five-year monitoring and maintenance program, will likely vary in some ways from the proposed plan as individual recruitment of acceptable natives will occur in conjunction with loss of other target species. It is expected that the general character of the community will not change from what is established and deemed successful at the end of the five-year monitoring period.

As such, the goals of the long-term monitoring program are fairly simple:

- To maintain the levels of weed species recorded at the end of the five-year monitoring and maintenance period;

- To maintain overall vegetative cover to 70-percent or if greater than 30-percent, no more than 70-percent cover by non-cactus species;

- To maintain the levels of fire-prone species to acceptable levels;
- To maintain adequate moisture in the vegetation through the use of supplemental irrigation that would be used during periods of drought or protracted periods of low rainfall.

Each of these is addressed below.

1. **Maintenance of Non-Native Weeds**

Twice annually, the site would be inspected by a Biologist or Landscape Contactor experienced in the native and non-native species expected on the site. The initial inspections should be conducted about one month following the first significant rainfall of the season, to determine which common non-native species including grasses and forbs have germinated and will require maintenance to maintain at levels of ten-percent or less absolute cover. The weed removal would be timed to remove non-native weeds when they can be accurately identified but prior to seed set, to limit future weed problems. A later season visit would be timed to identify later season weeds such as summer mustard and would generally occur in March or April with weeding to follow accordingly. Following the second weeding session, absolute weed cover would be no more than ten-percent absolute cover.

2. **Maintain Absolute Native Cover at 70-Percent**

In order to provide for public safety, absolute cover by native species will be maintain at 70-percent cover or, if no more than 70-percent of non-cactus species. Where necessary to maintain absolute cover at no more than 70-percent of non-cactus species, plants will be removed following the following protocol:

In order to retain species diversity no more than 10-percent of any singles species would be removed. Limited numbers of small shrubs such as coast goldenbush, coyote bush, bush monkey flower would be removed first, followed by larger shrubs such as laurel sumac or toyon. In all cases, the species with the greatest representation would be removed first so as to ensure species diversity. California walnuts, blue elderberries and coast live oaks will not be removed unless diseased or determined to be a threat to public safety by the Orange County Fire Authority (OCFA), and then only those that are diseased or pose a threat to public safety will be removed. As noted, as the cactus expands, greater than 70-percent cover may be achieved and vegetation removal will be such than non-cactus shrubs do not exceed 70-percent absolute cover.

3. **Removal of "Fire-Prone" Species**

Fire-prone species, as listed on OCFA's website, will be removed on an annual basis at either the seedling or sapling stage.

4. Irrigation for Long-Term Management

Irrigation may be used for long-term management of the mitigation areas to ensure the following: maintain plant moisture at acceptable levels during periods of below-average rainfall which would be determined as less than average during any two-month period. When such deficits occur, irrigation may be applied to mimic normal conditions. Excessive irrigation is not allowed (defined as more than 125-percent of normal rainfall) for any two month period.

C. Funding

Funding for the long-term management is based on the assumptions set forth above and will be determined through preparation of the Property Analysis Record below.

X. PAR ASSUMPTIONS FOR LONG-TERM IMPLEMENTATION OF HABITAT RESTORATION INCLUDING WITHIN SPECIAL MAINTENANCE AREAS

The following assumptions were made during preparation of this Property Analysis Record (PAR):

- **Restoration Areas:** The Restoration Areas addressed in this PAR consist of:

    1. Riparian Habitat Restoration Area within and immediately adjacent to Blue Mud Canyon Creek that includes restoration of coast live oak riparian forest, mulefat scrub, California walnut/mulefat scrub and southern willow scrub.
    2. California walnut woodland and blue elderberry woodland within the Blue Mud Canyon environs and on the south-facing slope above Drainage D at the northwest corner of Phase I of the project [see Exhibit 7].

- **Prior Maintenance:** Prior to initiation of long-term maintenance, the restoration areas will be planted, maintained, and monitored for a period of five years. During this period, vegetation within the subject maintenance areas within the subject restoration areas will be managed at the prescribed target vegetation cover as set forth in Sections 1 and 2 of the HMMP.

- **Responsible Party:** The Homeowner's Association (HOA) will be responsible for implementing the long-term management of the subject restoration areas.

- **Contingency Rate:** No contingency fee was added to the total cost of maintenance activities.

- **Capitalization Rate:** A capitalization rate of 4% was applied to this PAR to generate the endowment.

- **Habitat Maintenance:** As described in Part 2 of the HMMP, Section IX Long-Term Management and Maintenance, the following measures will comprise the long-term management and maintenance:

    - Twice-annual removal of non-native invasive species and other weeds from the riparian restoration area and the California walnut and blue elderberry woodland along with trash removal, which would occur during these visits;
    - Annual removal of fire-prone species from 10.2 acre area designated for removal of fire-prone species;
    - Annual maintenance to ensure public safety by maintaining non-cactus native cover at no more than 70-percent absolute cover within 10.2 acre area designated for removal of fire-prone species.
    - Annual maintenance of irrigation system.

These tasks will be carried out by the HOA in accordance with the HMMP and Conceptual Fuel Modification Plan. Vegetation maintenance will be done (a) with hand held tools consistent with best management practices; (b) outside of the avian nesting season, or if during the nesting season, only after a biological monitor confirms that there will be no effects to nesting birds; (c) in a manner that will not reduce or eliminate any plants that are planned for the area; and (d) in a manner that minimizes effect to either target species (e.g., least Bell's vireo) and to more common species that are protected under the Migratory Bird Treaty Act. Cut vegetation, if any, will be disposed of at an offsite facility and will not be chipped or dispersed of onsite. Vegetation maintenance could be performed up to two times per year, and the budget for this PAR assumes two visits for general weeding on one annual visit to remove fire-prone species and maintain non-cactus native scrub within the 10.2-acre area. The task incorporates maintenance of 20.11 acres per year at $300.00 per acre, for an annual cost of $6,033. The annual cost for fire-prone species removal and maintenance of the fire-prone vegetation removal areas at no more than 70-percent non-cactus species is $100 per acre or 1,031 per year for a total of $7,064. This assumption is adequate since the special maintenance areas will be densely planted with cactus and lower growing grasses, forbs, and shrubs, thereby reducing the opportunity for recruitment of invasive and "undesirable" species. At 4-percent return, an endowment of $176,560.

Appendix A

Distribution Page of all Persons/Agencies Receiving a Copy of the Mitigation and Monitoring Plan, As-Built Reports, and Annual Reports

Jason Lambert
U.S. Army Corps of Engineers
Los Angeles District, Regulatory Branch
911 Wilshire Boulevard, 11th Floor
Los Angeles, California 90017-3401

Kevin Hupf
California Department of Fish & Wildlife
Environmental Scientist
3883 Ruffin Road
San Diego, California 92123

Glenn Robertson
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, California 92501-3339

Christine Medak
US Fish and Wildlife Service
Carlsbad FWO
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011

Appendix B

Samples of Monitoring Data Sheets

TRANSECT/PERCENT COVER ESTIMATION
Sheet ___ of ___
Transect Number:
Transect Length:
Readings/Transect:
Distance Between Readings:
Photostation Number:
Comments:

Project Name: _________________
Date: _________________________
Recorders: ____________________

Bare/Vacant:

"Herb" Layer
0 - 3'

Species	Tally

"Shrub" Layer
>3' - 8'

Species	Tally

"Tree" Layer
>8'

Species	Tally

Additional Species:
(within 1.0 m of transect)

MONITORING SHEET - QUALITATIVE EVALUATION

Project Name: ________________________
Date: ________________________________
Recorders: ____________________________

Plant Health - General
Are there visible signs of nutrient/water deficiencies? If yes, then describe:

Are there signs of regeneration/reseeding?

Is vandalism harming plant health or project success?

Are there any signs of herbivory?:

Other:

Container Stock
Provide visual estimation percent survival of container stock:

Are watering basins intact?:

Is mulch from original installation still present? Is there litter development?:

Seeded Species
Are all intended native species present? If not, then what is missing?:

Are there any occurrences of volunteer native species?:

Are there any unvegetated areas? Should these be remediated?:

Weeds
Is excessive competition from weeds affecting desired species?:

Is there adequate maintenance/weed clearing?:

Other:

Soils
Are there any signs of soil development?:

Other:

Irrigation System
Are irrigation heads functioning properly?:

Are there any signs of rodent damage to irrigation system?:

Are there any signs of vandalism to the irrigation system/controller box?:

Are there any signs of excessive runoff?:

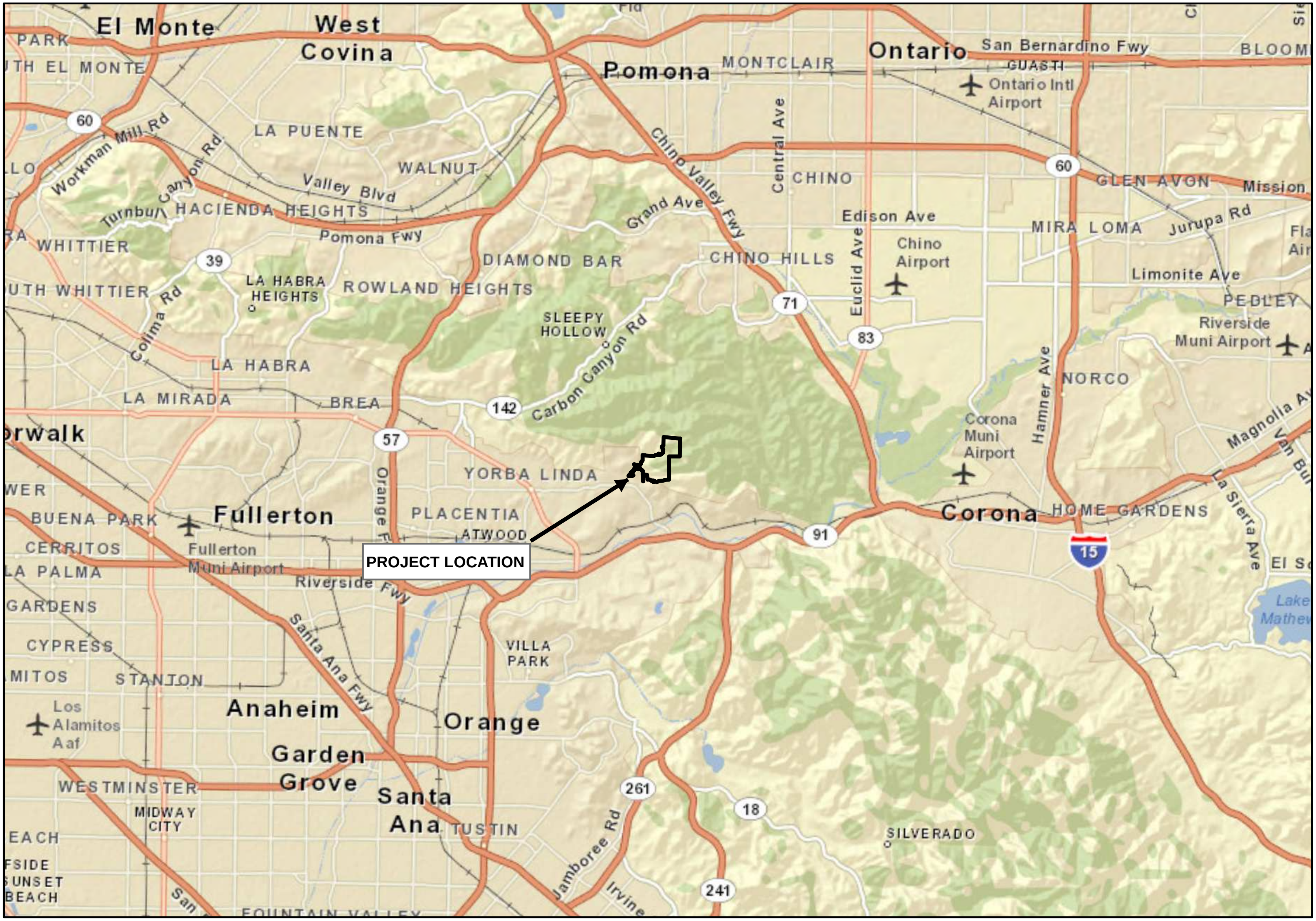
Does irrigation frequency and volume require adjustment?

Other:

Is there any indication that wildlife is using the site?:

Recommendations for Remediation:

Source: ESRI World Street Map



N

0
2
4
8
Miles

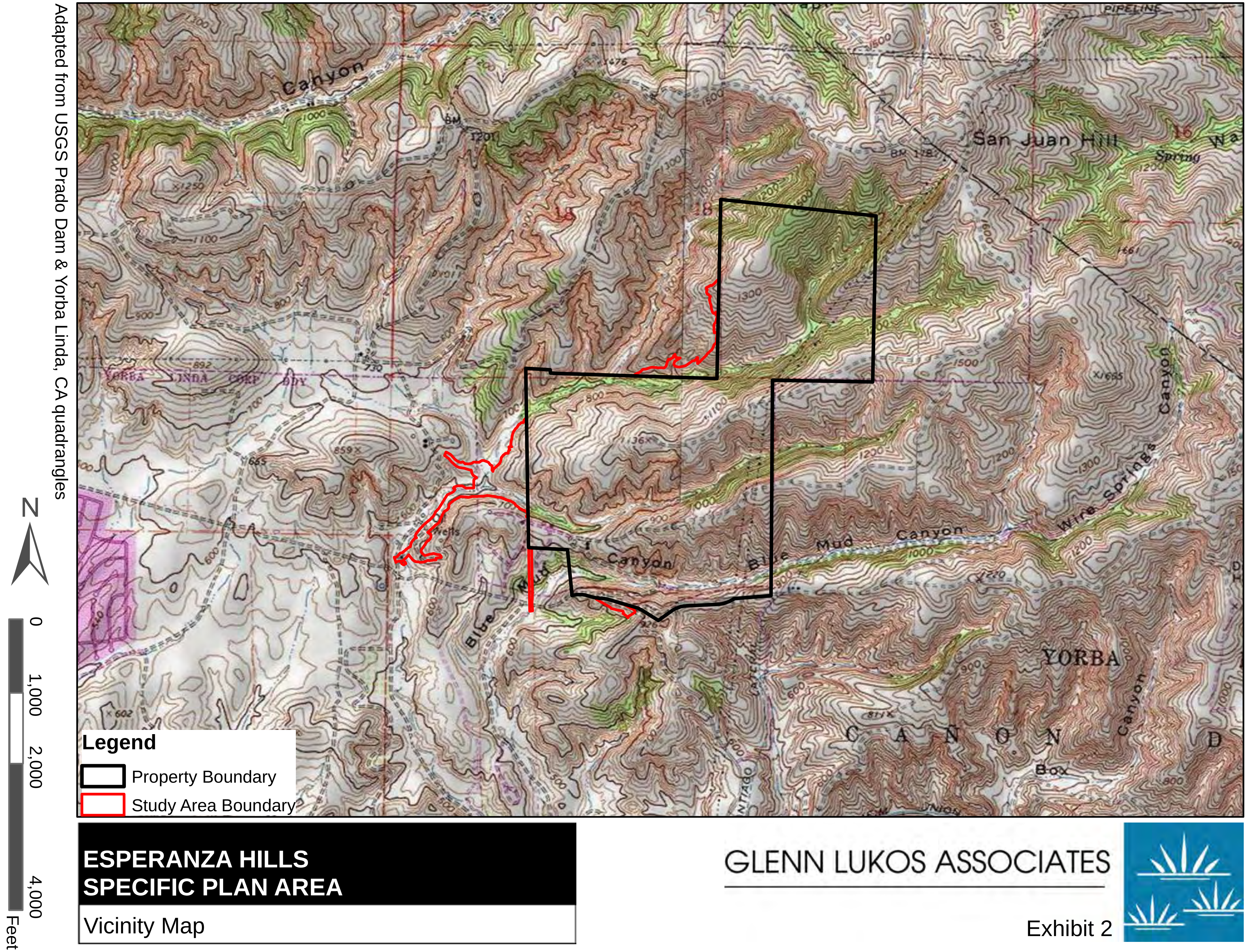
ESPERANZA HILLS
SPECIFIC PLAN AREA

Regional Map

GLENN LUKOS ASSOCIATES

Exhibit 1

Adapted from USGS Prado Dam & Yorba Linda, CA quadrangles



ESPERANZA HILLS SPECIFIC PLAN AREA

Vicinity Map

GLENN LUKOS ASSOCIATES

Exhibit 2

Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- Corps Non-Wetland Waters
- Corps Wetland
- Width in Feet (W indicates wetland jurisdiction)

N

0 350 700 1,400
Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: March 14, 2013

ESPERANZA HILLS SPECIFIC PLAN AREA

Corps Jurisdictional Delineation/Alternative 3 Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 3A

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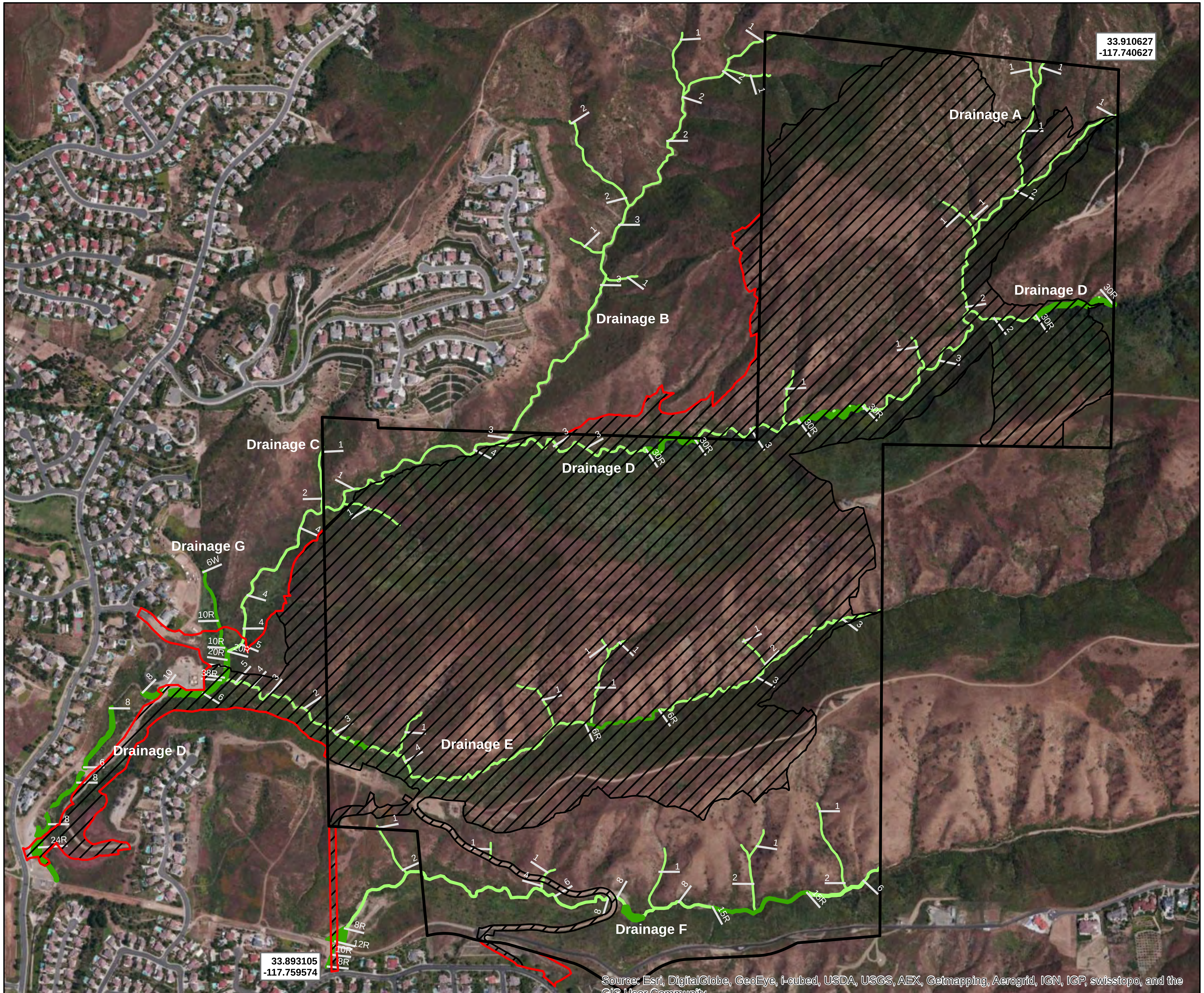


Legend

- Property Boundary
- Study Area Boundary
- Alternative 3 Project Footprint
- Width in Feet (R indicates riparian jurisdiction)
- CDFW Unvegetated Streambed
- CDFW Riparian

N

0 350 700 1,400
Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 10, 2013

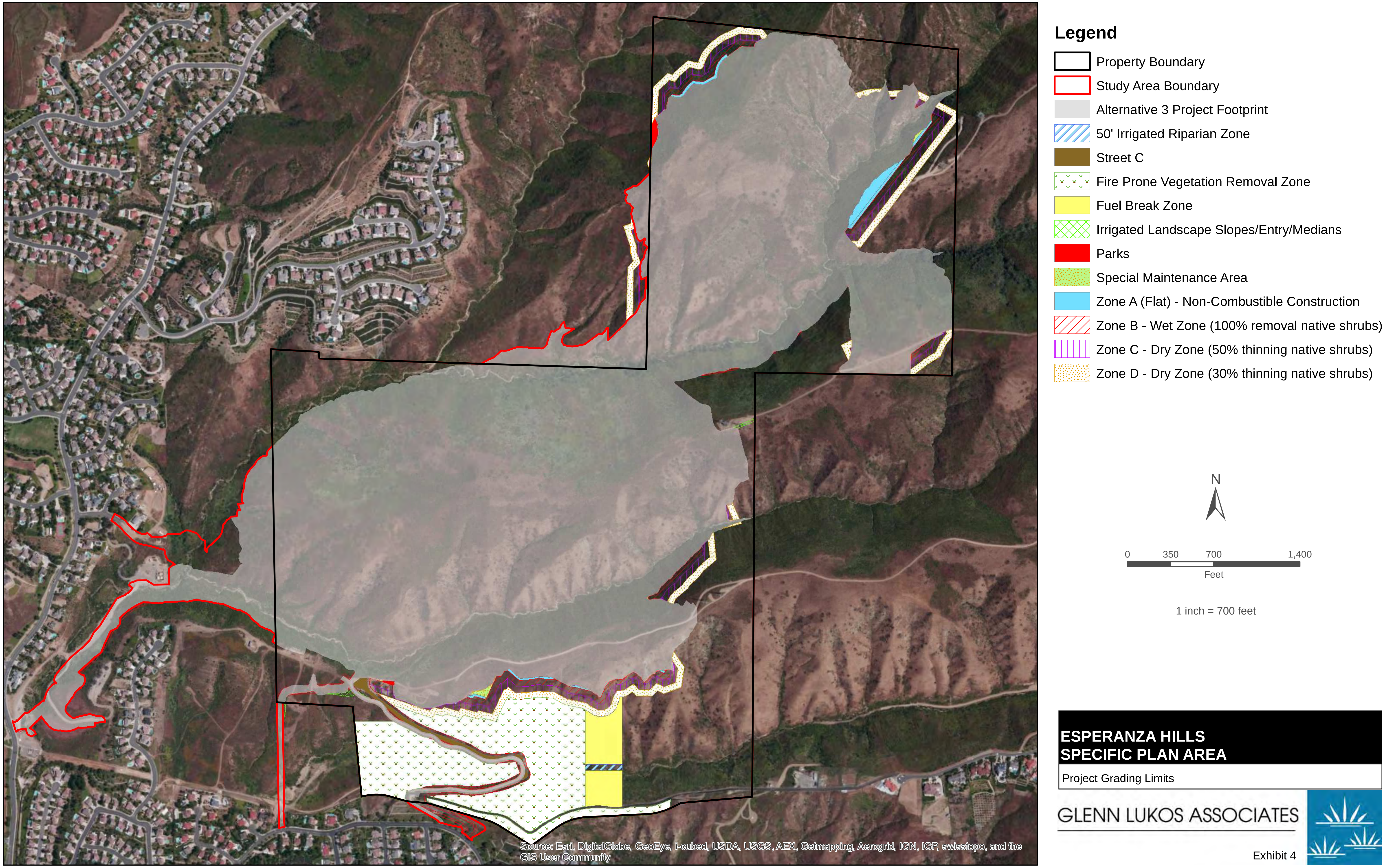
ESPERANZA HILLS SPECIFIC PLAN AREA

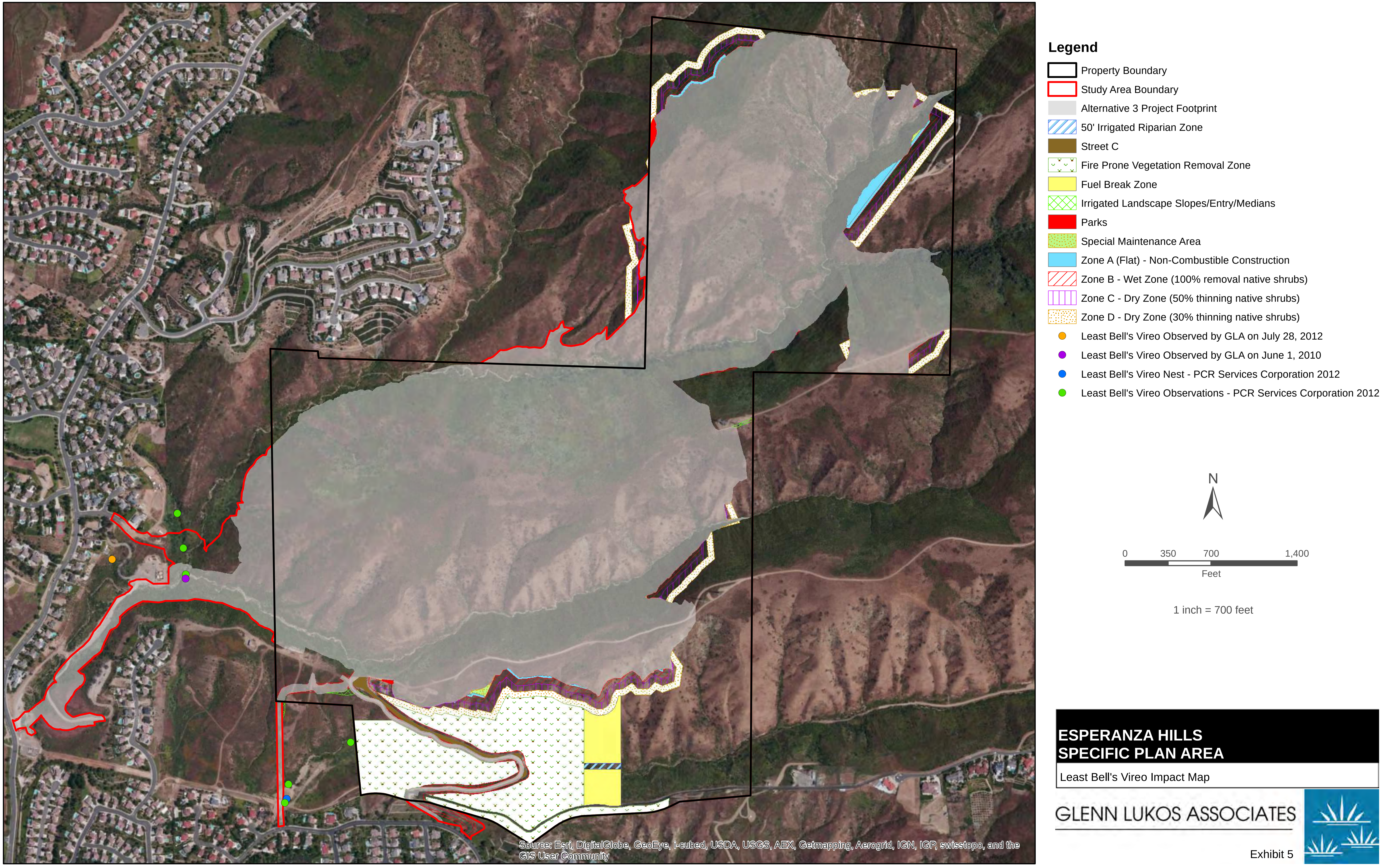
CDFW Jurisdictional Delineation/Alternative 3 Impact Map

GLENN LUKOS ASSOCIATES

Exhibit 3B

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 CDFWAlternative3 05 10 13.mxd


Legend
Property Boundary
Study Area Boundary
Alternative 3 Project Footprint
50' Irrigated Riparian Zone
Street C
Fire Prone Vegetation Removal Zone
Fuel Break Zone
Irrigated Landscape Slopes/Entry/Medians
Parks
Special Maintenance Area
Zone A (Flat) - Non-Combustible Construction
Zone B - Wet Zone (100% removal native shrubs)
Zone C - Dry Zone (50% thinning native shrubs)
Zone D - Dry Zone (30% thinning native shrubs)
N
0
350
700
1,400
Feet
1 inch = 700 feet
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
ESPERANZA HILLS
SPECIFIC PLAN AREA
Project Grading Limits
GLENN LUKOS ASSOCIATES
Exhibit 4
X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 Alternative3_FMZ Ex4.mxd



Legend
Property Boundary
Study Area Boundary
Alternative 3 Project Footprint
50' Irrigated Riparian Zone
Street C
Fire Prone Vegetation Removal Zone
Fuel Break Zone
Irrigated Landscape Slopes/Entry/Medians
Parks
Special Maintenance Area
Zone A (Flat) - Non-Combustible Construction
Zone B - Wet Zone (100% removal native shrubs)
Zone C - Dry Zone (50% thinning native shrubs)
Zone D - Dry Zone (30% thinning native shrubs)
Least Bell's Vireo Observed by GLA on July 28, 2012
Least Bell's Vireo Observed by GLA on June 1, 2010
Least Bell's Vireo Nest - PCR Services Corporation 2012
Least Bell's Vireo Observations - PCR Services Corporation 2012
N
0 350 700 1,400
Feet
1 inch = 700 feet
ESPERANZA HILLS
SPECIFIC PLAN AREA
Least Bell's Vireo Impact Map
GLENN LUKOS ASSOCIATES
Exhibit 5
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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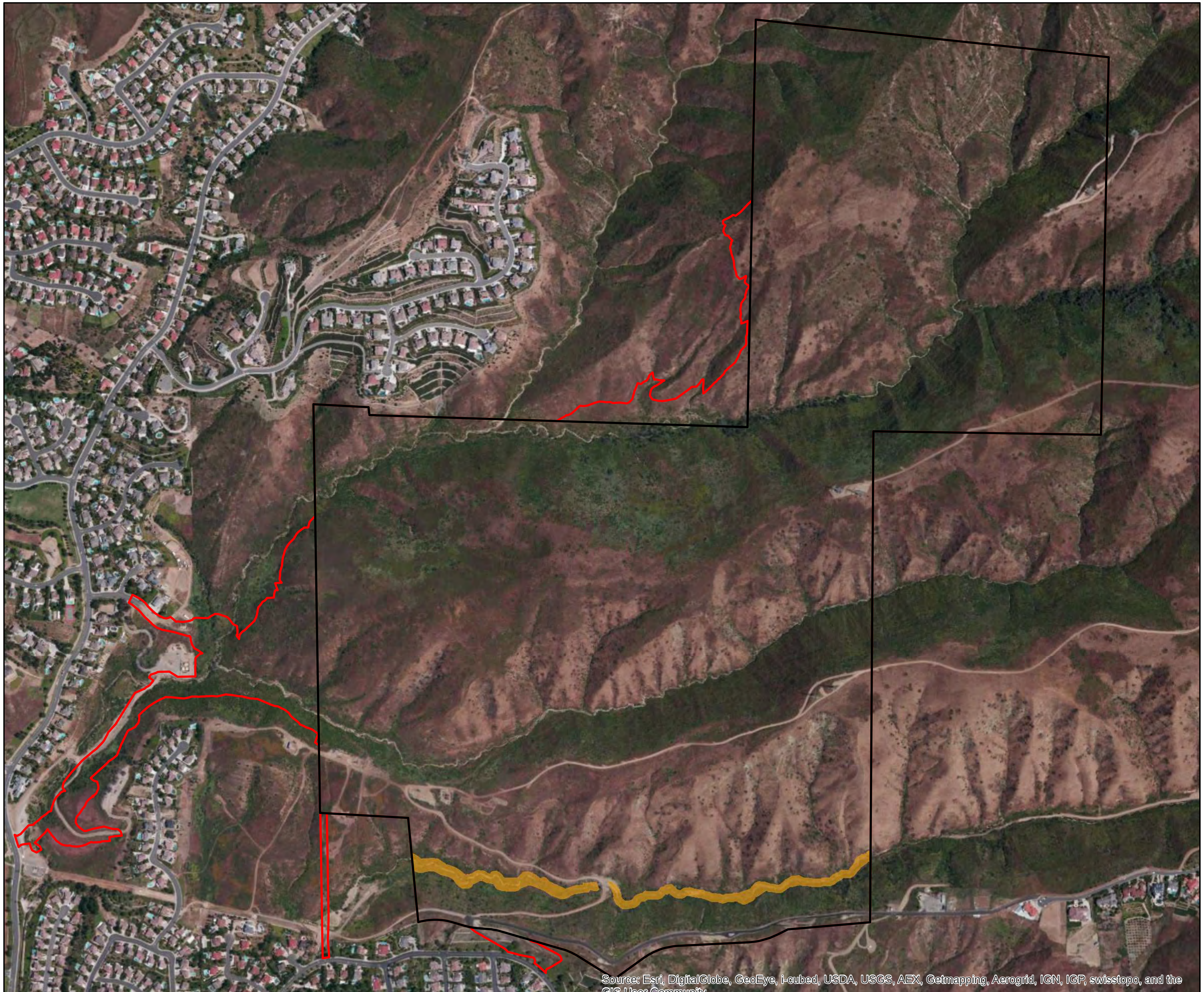


Legend

- Property Boundary
- Study Area Boundary
- Candidate Riparian Mitigation Area - 5.30 ac.

N

0 350 700 1,400
Feet

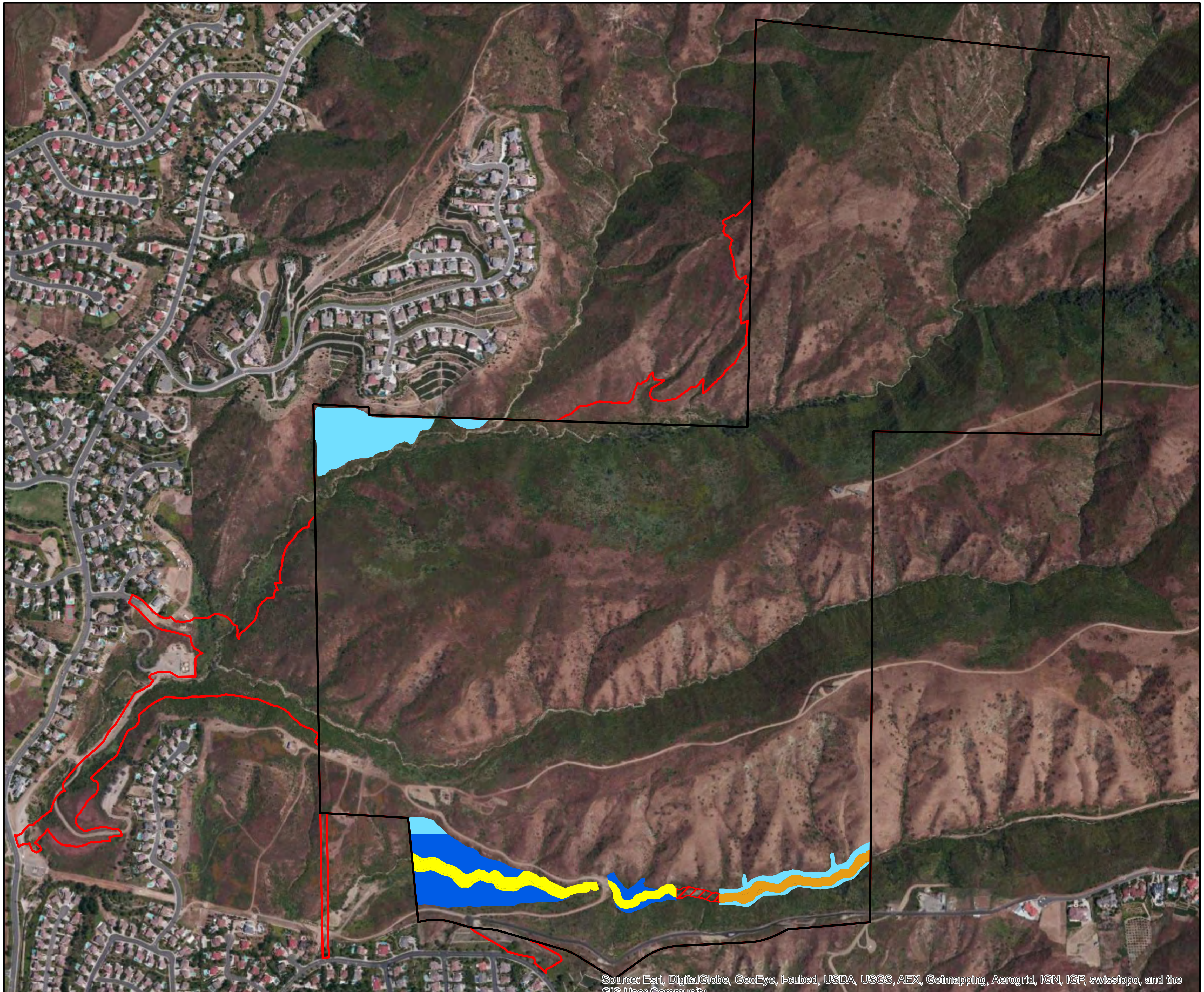
1 inch = 700 feet

ESPERANZA HILLS SPECIFIC PLAN AREA

Blue Mud Canyon Riparian Mitigation Areas

GLENN LUKOS ASSOCIATES

Exhibit 6



Legend

- Property Boundary
- Study Area Boundary
- Candidate Elderberry/Walnut Mitigation Area (8.00 ac.)
- Candidate Elderberry/Walnut Mitigation Area - Fire Prone Vegetation Removal Zone (6.70 ac.)
- Candidate Ripiarian Mitigation Area (1.80 ac.)
- Candidate Ripiarian Mitigation Area - Fire Prone Vegetation Removal Zone (3.50 ac.)
- 50-Foot Irrigated Zone (0.43 ac.) (Not included as project mitigation)

N

0 350 700 1,400

Feet

1 inch = 700 feet

ESPERANZA HILLS SPECIFIC PLAN AREA

California Walnut Blue Elderberry Woodland Mitigation Areas

GLENN LUKOS ASSOCIATES

Exhibit 7

Table 1. Summary of Fuel Modification Impacts to Vegetation Associations/Cover Types Associated with Alternative 1 (outside grading limits)

Vegetation/Land Use Type	**Zone A**	**Zone B**	**Zone C**	**Zone D**	**Fuel Break Zone**	**Fire Prone Vegetation Removal Zone**	**Special Maintenance Areas**	**50-Foot Irrigated Riparian Zone**	**Parks**	**Total Impacts (Acres)**
Coastal Sage Scrub										
California Sagebrush Scrub	0.05	0.20	0.17	0.10		1.25				**1.77**
Disturbed California Sagebrush Scrub		0.43	0.27	0.12		1.10				**1.92**
Purple Sage Scrub		0.13	0.08	0.08						**0.29**
Sagebrush-Monkeyflower Scrub		0.01				1.19				**1.20**
Ecotonal Habitats										
Coastal Sage Scrub/Chaparral Ecotone	0.18	0.87	0.80	1.16	1.21	6.21			0.03	**10.46**
Sumac Savannah		0.13	0.03	0.02		1.83			0.20	**2.21**
Chaparral Habitats										
Toyon/Sumac Chaparral	2.36	2.50	2.27	2.80			0.04		0.01	**9.98**
Sumac/Elderberry Chaparral										
Woodland Habitats										
California Walnut Woodland		0.36				5.53				**5.89**
Blue Elderberry Woodland		0.01			0.43	0.52		0.34		**1.30**
Southern Coast Live Oak Forest										
Riparian Habitats										
Mulefat Scrub		0.07			0.16	0.37				**0.60**
Black Willow Riparian Forest										
California Walnut/Mulefat Scrub		0.02			0.40	0.55				**0.97**
Southern Willow Scrub					0.06	0.03				**0.09**
Grassland Habitats										
Annual Grassland		1.80	2.10	2.32	2.57	8.05				**16.84**
Disturbed Habitats										
Ruderal		0.29	0.44	0.69	0.06	1.52				**3.00**
Developed Land										
Graded Areas/Paved Roads		0.06	0.03	0.08	0.07	0.58				**0.82**
Ornamental Vegetation										
Detention Basin										
Total Vegetation/Land Use Acreage	**2.59**	**6.88**	**6.19**	**7.37**	**4.96**	**28.73**	**0.04**	**0.34**	**0.24**	**57.34**

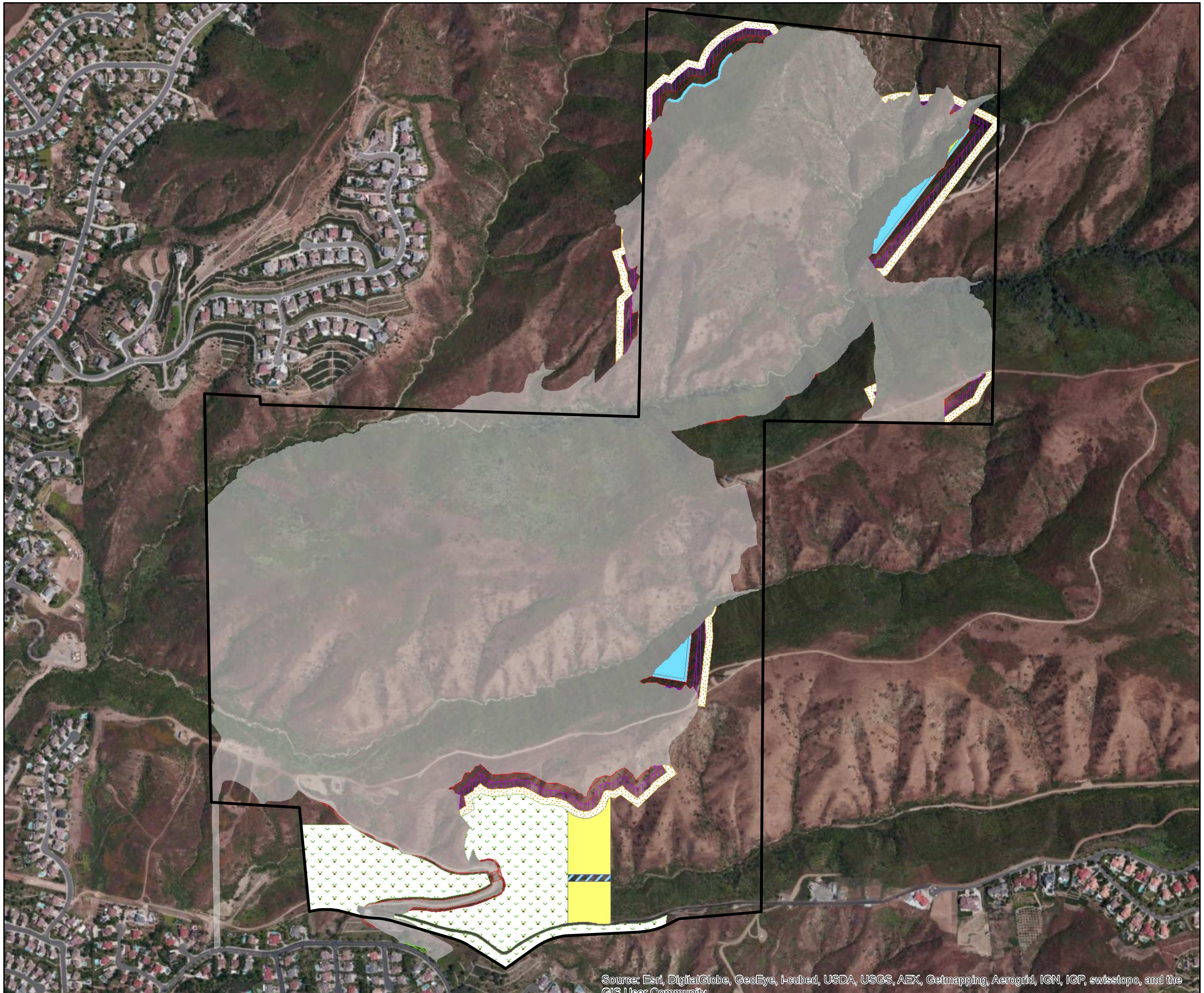
Table 2. Summary of Fuel Modification Impacts to Vegetation Associations/Cover Types Associated with Alternative 2 (outside grading limits)

Vegetation/Land Use Type	Zone A	Zone B	Zone C	Zone D	Fuel Break Zone	Fire Prone Vegetation Removal Zone	Special Maintenance Areas	50-Foot Irrigated Riparian Zone	Parks	Total Impacts (Acres)
Coastal Sage Scrub										
California Sagebrush Scrub	0.05	0.26	0.17	0.10		1.25				**1.83**
Disturbed California Sagebrush Scrub		0.42	0.36	0.23		1.73				**2.74**
Purple Sage Scrub		0.13	0.08	0.08						**0.29**
Sagebrush-Monkeyflower Scrub		0.05				1.14				**1.19**
Ecotonal Habitats										
Coastal Sage Scrub/Chaparral Ecotone	0.18	0.91	0.80	1.16	1.21	6.38			0.03	**10.67**
Sumac Savannah		0.15	0.12	0.22		2.11			0.20	**2.80**
Chaparral Habitats										
Toyon/Sumac Chaparral	2.36	2.52	2.27	2.80			0.04		0.01	**10.00**
Sumac/Elderberry Chaparral										
Woodland Habitats										
California Walnut Woodland		0.30				5.85				**6.15**
Blue Elderberry Woodland		0.02			0.43	0.53		0.34		**1.32**
Southern Coast Live Oak Forest										
Riparian Habitats										
Mulefat Scrub		0.03			0.16	0.40				**0.59**
Black Willow Riparian Forest										
California Walnut/Mulefat Scrub		0.02			0.40	0.60				**1.02**
Southern Willow Scrub					0.06	0.03				**0.09**
Grassland Habitats										
Annual Grassland		2.80	2.71	2.91	2.57	10.79				**21.78**
Disturbed Habitats										
Ruderal		0.53	0.44	0.69	0.06	1.32				**3.04**
Developed Land										
Graded Areas/Paved Roads		0.11	0.03	0.08	0.07	0.67				**0.96**
Ornamental Vegetation										
Detention Basin										
Total Vegetation/Land Use Acreage	**2.59**	**8.25**	**6.98**	**8.27**	**4.96**	**32.80**	**0.04**	**0.34**	**0.24**	**64.47**

Table 3. Summary of Fuel Modification Impacts to Vegetation Associations/Cover Types Associated with Alternative 3 (outside grading limits)

Vegetation/Land Use Type	**Zone A**	**Zone B**	**Zone C**	**Zone D**	**Fuel Break Zone**	**Fire Prone Vegetation Removal Zone**	**Special Maintenance Areas**	**50-Foot Irrigated Riparian Zone**	**Parks**	**Difference in Street C (than in development footprint)**	**Irrigated Landscaped Slopes/Entry/ Medians**	**Total Impacts (Acres)**
Coastal Sage Scrub												
California Sagebrush Scrub		0.03	0.01	0.09		1.25			0.01		0.07	**1.46**
Disturbed California Sagebrush Scrub		0.37	0.26	0.20		1.83	0.03			0.03		**2.72**
Purple Sage Scrub	0.05	0.10	0.05									**0.20**
Sagebrush-Monkeyflower Scrub						1.19						**1.19**
Ecotonal Habitats												
Coastal Sage Scrub/Chaparral Ecotone	0.18	0.88	0.80	1.16	1.21	6.39			0.03	0.01		**10.66**
Sumac Savannah		0.24	0.13	0.13		2.07			0.20			**2.77**
Chaparral Habitats												
Toyon/Sumac Chaparral	1.38	2.63	2.63	3.21			0.04		0.01			**9.90**
Sumac/Elderberry Chaparral												
Woodland Habitats												
California Walnut Woodland		0.40				5.75						**6.15**
Blue Elderberry Woodland		0.01		0.08	0.43	0.52		0.34		0.01		**1.39**
Southern Coast Live Oak Forest												
Riparian Habitats												
Mulefat Scrub		0.04			0.16	0.39				0.01		**0.60**
Black Willow Riparian Forest												
California Walnut/Mulefat Scrub		0.03			0.40	0.56				0.03		**1.02**
Southern Willow Scrub					0.06	0.03						**0.09**
Grassland Habitats												
Annual Grassland	0.22	2.98	2.86	3.48	2.56	10.15	0.13		0.01	0.72	0.04	**23.15**
Disturbed Habitats												

Ruderal		0.23	0.42	0.54	0.06	1.51					0.11	**2.87**
Developed Land												
Graded Areas/Paved Roads		0.27	0.07	0.01	0.07	0.66			0.03	0.24		**1.35**
Ornamental Vegetation		0.05										**0.05**
Detention Basin												
Total Vegetation/Land Use Acreage	**1.83**	**8.26**	**7.23**	**8.90**	**4.95**	**32.30**	**0.20**	**0.34**	**0.29**	**1.05**	**0.22**	**65.57**



Legend

- Property Boundary
- Alternative 1 Footprint
- 50' Irrigated Riparian Zone
- Fire Prone Vegetation Removal Zone
- Fuel Break Zone
- Irrigated Landscape Slopes/Entry/Medians
- Parks
- Special Maintenance Areas
- Zone A (Flat) - Non-Combustible Construction
- Zone B - Wet Zone (100% removal native shrubs)
- Zone C - Dry Zone (50% thinning native shrubs)
- Zone D - Dry Zone (30% thinning native shrubs)

N

0 350 700 1,400

Feet

1 inch = 700 feet

ESPERANZA HILLS SPECIFIC PLAN AREA

Alternative 1 Fuel Modification

GLENN LUKOS ASSOCIATES

Exhibit 1

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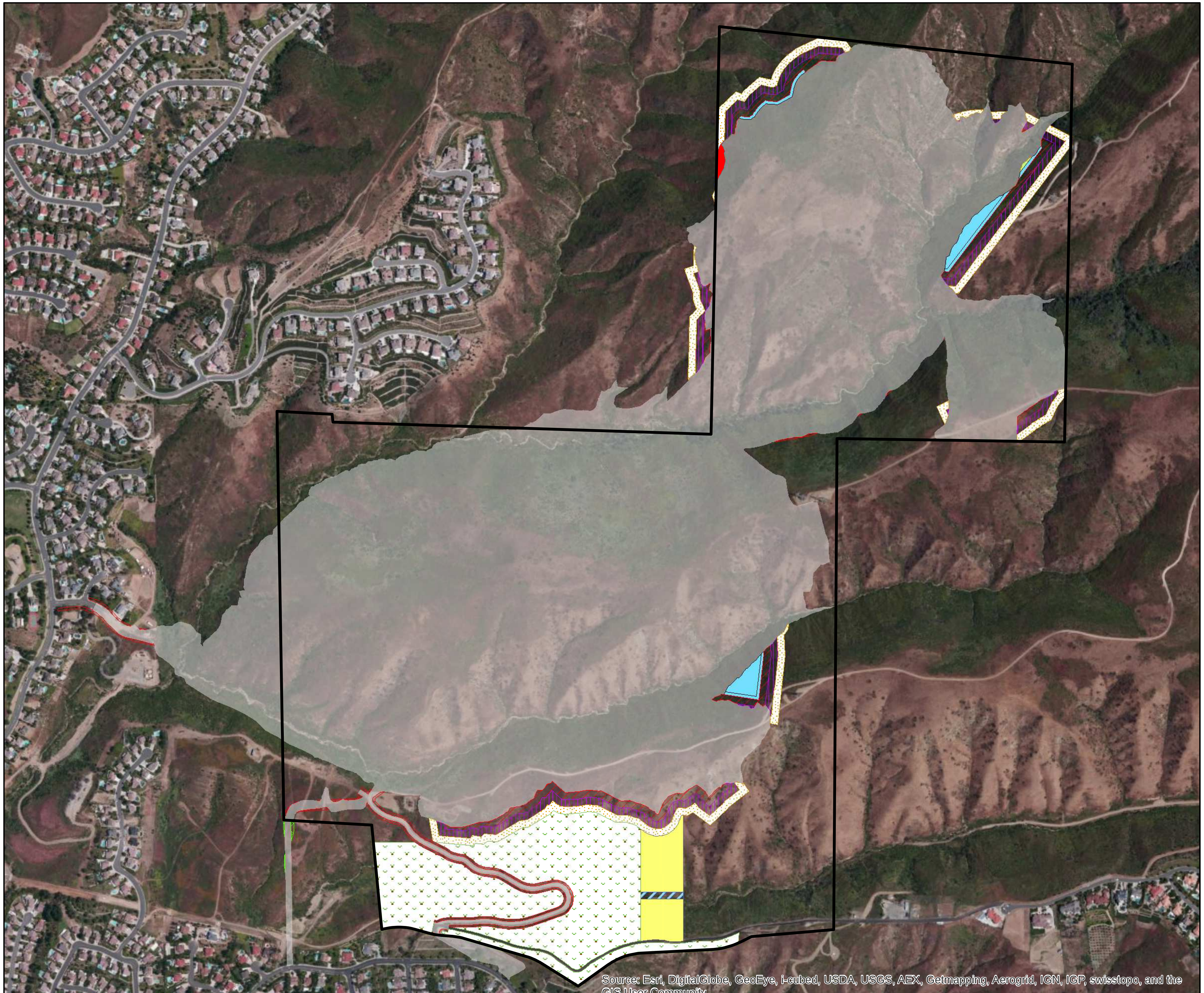


Legend

- Property Boundary
- Alternative 2 Footprint
- 50' Irrigated Riparian Zone
- Fire Prone Vegetation Removal Zone
- Fuel Break Zone
- Irrigated Landscape Slopes/Entry/Medians
- Parks
- Special Maintenance Area
- Zone A (Flat) - Non-Combustible Construction
- Zone B - Wet Zone (100% removal native shrubs)
- Zone C - Dry Zone (50% thinning native shrubs)
- Zone D - Dry Zone (30% thinning native shrubs)

N

0 350 700 1,400
Feet

1 inch = 700 feet

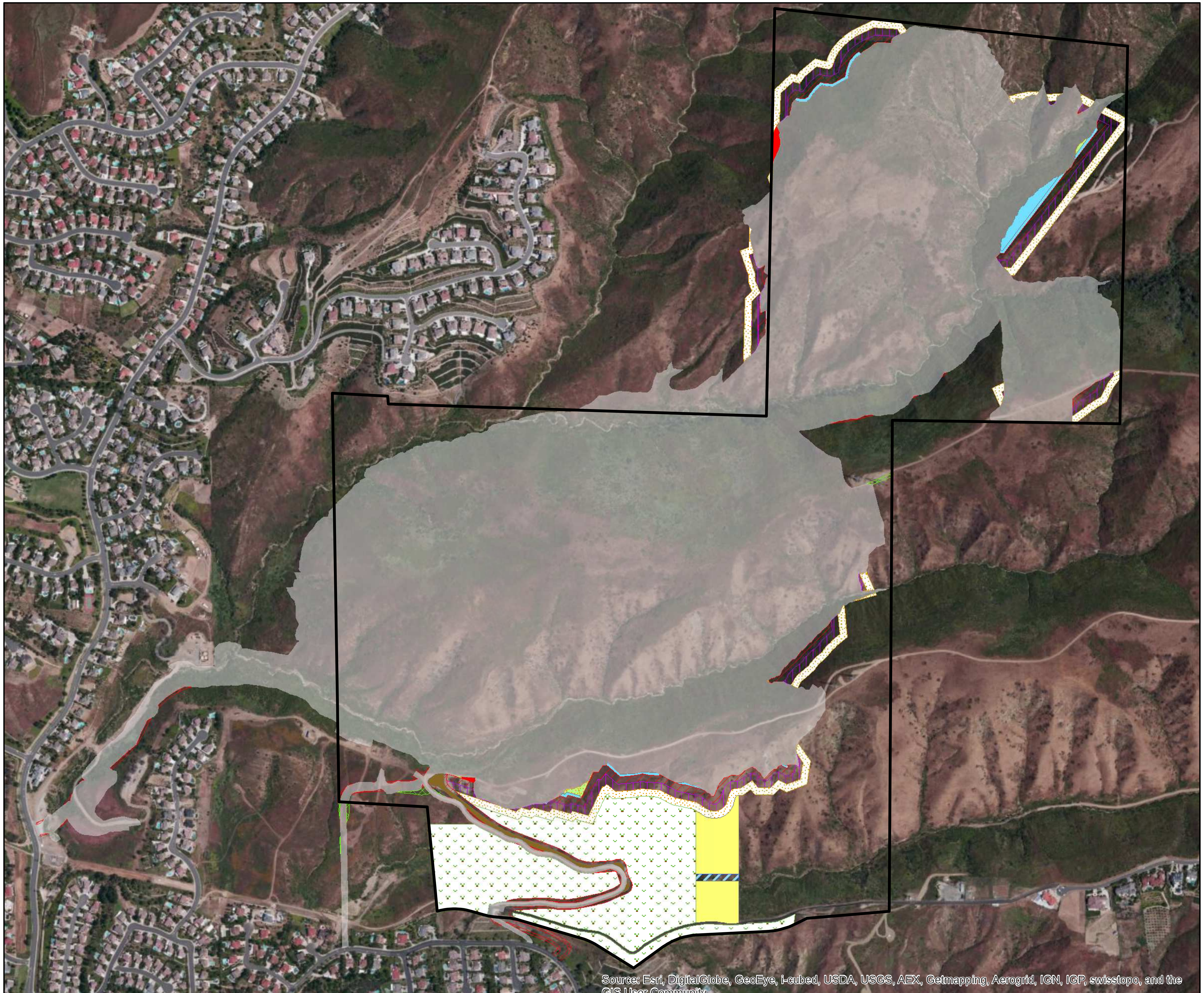
ESPERANZA HILLS SPECIFIC PLAN AREA

Alternative 2 Fuel Modification

GLENN LUKOS ASSOCIATES

Exhibit 2

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 Alternative2_FMZ.mxd



Legend

- Property Boundary
- Alternative 3 Project Footprint
- 50' Irrigated Riparian Zone
- Difference in Street C
- Fire Prone Vegetation Removal Zone
- Fuel Break Zone
- Irrigated Landscape Slopes/Entry/Medians
- Parks
- Special Maintenance Area
- Zone A (Flat) - Non-Combustible Construction
- Zone B - Wet Zone (100% removal native shrubs)
- Zone C - Dry Zone (50% thinning native shrubs)
- Zone D - Dry Zone (30% thinning native shrubs)

N

0 350 700 1,400
Feet

1 inch = 700 feet

ESPERANZA HILLS SPECIFIC PLAN AREA

Alternative 3 Fuel Modification

GLENN LUKOS ASSOCIATES

Exhibit 3

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\ImpactsGIS\1050-2 Alternative3_FMZ.mxd

DEPARTMENT OF THE ARMY
Los Angeles District Corps of Engineers
P.O. Box 532711
Los Angeles, California 90053-2325

REPLY TO
ATTENTION OF

December 6, 2013

Regulatory Division

Tony Bomkamp
Glenn Lukos Associates
29 Orchard
Lake Forest, California 92630

SUBJECT: Preliminary Jurisdictional Determination regarding presence of geographic jurisdiction

Dear Mr. Bomkamp:

Reference is made to your request (File No. SPL-2013-00853-JPL) dated July 15, 2013, for a preliminary Department of the Army jurisdictional determination (JD) for the Esperanza Hills Project site (-117.749626, 33.901519) located near the city of Yorba Linda, in unincorporated Orange County, California. As part of the evaluation process, we have made the jurisdictional determination below.

As you may know, the Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, then a permit is required. The first test determines whether or not the proposed project is located in a water of the United States (i.e., it is within the Corps' geographic jurisdiction). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the River and Harbor Act or Section 404 of the Clean Water Act. As part of the evaluation process, pertaining to the first test only, we have made the jurisdictional determination below.

Based on available information, it appears waters of the United States may be present on the Esperanza Hills Project site in the approximate locations noted on the enclosed drawing. The basis for the preliminary JD can be found on the enclosed "Preliminary Jurisdictional Determination Form." Please note preliminary JDs are non-binding ". . . written indications that there may be waters of the United States, including wetlands, on a parcel or indications of the approximate location(s) of waters of the United States or wetlands on a parcel. Preliminary JDs are advisory in nature and may not be appealed." (33 C.F.R. 331.2.). The permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination for this site. The option to obtain an approved JD in this instance and at this time has been declined. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S.

Please be reminded that preliminary JDs may not be appealed through the Corps' administrative appeal process set out at 33 CFR Part 331. Preliminary jurisdictional determinations are fully explained in Regulatory Guidance Letter 08-02, dated June 26, 2008. Further, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the Esperanza Hills Project site identified in your request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

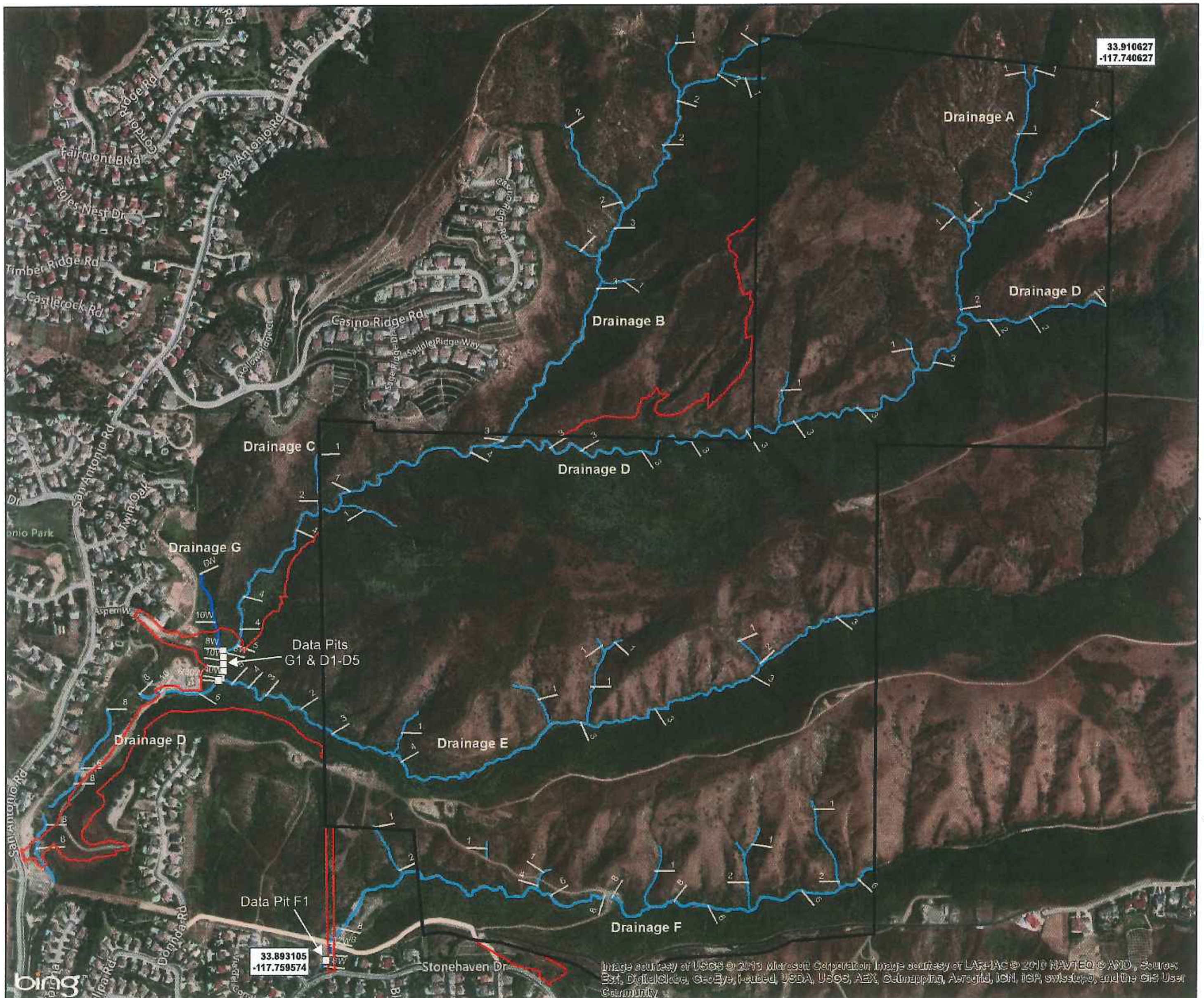
If you have any questions, please contact me at 213-452-3361 or via e-mail at Jason.P.Lambert@usace.army.mil.

Please be advised that you can now comment on your experience with Regulatory Division by accessing the Corps web-based customer survey form at: http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

Jason P. Lambert
Project Manager
South Coast Branch
Regulatory Division

Enclosures



Legend

- Property Boundary
- Study Area Boundary
- Corps Non-Wetland Waters
- Corps Wetland
- Width in Feet (W indicates wetland jurisdiction)
- Data Pit Location

N

0 350 700 1,400
Feet

1 inch = 700 feet

Aerial Photo: ESRI Basemaps Bing Hybrid
Reference Elevation Datum: State Plane 6 NAD 83
Map Prepared by: K. Kartunen, GLA
Date Prepared: May 10, 2013

ESPERANZA HILLS
SPECIFIC PLAN AREA

Corps Jurisdictional Delineation Map

GLENN LUKOS ASSOCIATES

Exhibit 3A

X:\0363-THE REST\1050-02ESPE\1050-02_GIS FINAL_USE THIS FOLDER\DelineationGIS\1050-2 Exhibit 3A.mxd

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

District Office: Los Angeles District | File/ORM #: SPL-2013-00853-JPL | PJD Date: December 6, 2013

State: CA | City/County: Orange

Nearest Waterbody: Santa Ana River

Location: TRS, LatLong or UTM: 33.898327 -117.749752

Name/Address of Person Requesting PJD: Tony Bomkamp, Glenn Lukos Associates, 29 Orchard, Lake Forest, CA 92630

Identify (Estimate) Amount of Waters in the Review Area:

Non-Wetland Waters: 26,149 linear ft | 3 width | 1.89 acres | Stream Flow: Intermittent

Wetlands: 0.19 acre(s) | Cowardin Class: Palustrine, forested

Name of Any Water Bodies on the Site Identified as Section 10 Waters: Tidal: none | Non-Tidal: none

☐ Office (Desk) Determination

☑ Field Determination: Date of Field Trip: 7/12/2013

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: See attached
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☑ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps
- ☐ Corps navigable waters' study:
- ☑ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☑ USGS 8 and 12 digit HUC maps.
- ☑ U.S. Geological Survey map(s). Cite quad name: Prado Dam and Yorba Linda
- ☑ USDA Natural Resources Conservation Service Soil Survey. Citation: http://websoilsurvey.sc.egov.usda.gov/App/HomeP
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☑ FEMA/FIRM maps: 060212-0069J and 060212-0090J
- ☐ 100-year Floodplain Elevation is:
- ☑ Photographs: ☑ Aerial (Name & Date): ESRI Basemaps Bing Hybrid
  - ☑ Other (Name & Date): Site photographs, January and February 2013
- ☐ Previous determination(s). File no. and date of response letter:
- ☑ Other information (please specify): See attachment

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

6 December 2013

Signature and Date of Regulatory Project Manager (REQUIRED)

Tony Bomkamp / Glenn Lukos Assoc.

Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

Esperanza Hills Specific Plan Project; Near the City of Yorba Linda; Orange County, California

Information for Preliminary Jurisdictional Determination Form

Site Number	Latitude	Longitude	Cowardin Class	Estimated Amount of Aquatic Resource in Review Area (Acres)	Class of Aquatic Resource
Drainage A	33.906987	-117.743804	Riverine	0.12	Non-Section 10 Non-Wetland
Drainage B	33.905809	-117.752835	Riverine	0.01	Non-Section 10 Non-Wetland
Drainage C	33.902586	-117.758956	Riverine	0.001	Non-Section 10 Non-Wetland
Drainage D Non-Wetland	33.902536	-117.755738	Riverine	0.61	Non-Section 10 Non-Wetland
Drainage D Wetland	33.898633	-117.760950	Palustrine, Forested	0.13	Non-Section 10 Wetland
Drainage E	33.898327	-117.749752	Riverine	0.47	Non-Section 10 Non-Wetland
Drainage F Non-Wetland	33.893868	-117.751491	Riverine	0.68	Non-Section 10 Non-Wetland
Drainage F Wetland	33.893255	-117.758320	Palustrine, Forested	0.02	Non-Section 10 Wetland
Drainage G Wetland	33.900255	-117.761586	Palustrine, Forested	0.04	Non-Section 10 Wetland
TOTAL				**2.08**	

Appendix D –
Geology Summary Report
Prepared by American Geotechnical, Inc. dated March 12, 2014

March 12, 2014 File No. P33366-03

Yorba Linda Estates, LLC
7114 E. Stetson, Suite 350
Scottsdale, AZ 85251

Subject: **SUMMMARY OF GEOTECHNICAL EXPLORATION AND ENGINEERING ANALYSIS – ESPERANZA HILLS DEVELOPMENT**
Unincorporated Northeast County of Orange, California

Gentlemen:

Per your request, we have prepared this summary of completed field investigation and engineering analysis for the subject project through March 2014. To date, a majority of investigatory work has focused on the Simmons and Yorba Linda Estates parcels of the greater development area, and an alignment of access/egress connecting with San Antonio. The purpose of exploration has been to satisfy 100-scale tentative-tract-level application and approval.

Conceptual design plans for the subject parcels include construction of approximately 218 residential building lots, a buried domestic water tank and pump/booster station pads, 12-inch water main pipelines, multiple WQMB basins and 54- and 78-inch underground storm drain pipelines, parks, a small bridge, internal roadways, emergency fire access roads and large retaining walls. Development is to be accomplished through use of conventional cut and fill earthwork grading methods using heavy earthmoving equipment. Slopes are to be constructed at ratios of approximately 2:1 (horizontal:vertical).

Equipment access is so limited in certain canyon areas we propose use of hand-excavated test pits and track-mounted Bobcat trenching equipment to best explore these areas.

EXPLORATION BY OTHERS

A Geologic Constraints and Estimated Thickness of Alluvium and Landslide Debris Map specific to the property for a former development plan was prepared by Earth Consultants International in 1998 (ECI, 1998). The map is based on field mapping and a review of available geologic reports and former maps.

The ECI work was followed in 2002, by excavation of a series of 39 backhoe pits to a maximum depth of 15 feet conducted by Allan E. Seward Engineering Geology, Inc. (Seward, 2002). No specific development plan was considered as part of this work. Seward carried forward and updated the data presented on the ECI map. The locations of Seward trenches and geologic mapping are depicted on the current American Geotechnical (AG) map.

EXPLORATION BY AG

In 2012, AG published a Fault Hazard Assessment Report for a segment of the Whittier Fault that crosses the southerly margins of the subject development (AG, 2012). The scope of work employed during that study included a comprehensive review of available geologic literature including regulatory agency files, our in-house library, on-line resources, published geologic reports, geologic and geotechnical maps, cross sections and professional consultant fault studies and mass grading reports prepared for nearby areas. Also reviewed were stereo-pairs of historical aerial photographs, geomorphic landforms related to faulting, and a LiDAR imagery flown specifically for the subject property.

The fieldwork phase of work included reconnaissance geologic mapping and preparation of a 400-scale geologic map incorporating applicable existing surface and subsurface geologic conditions by all previous investigators. Subsurface exploration included excavation and detailed logging of six fault trenches at a scale of 1-inch equals 5 feet, totaling over 2,500 feet in length and extending up to a maximum depth of 20 feet. The locations of the trenches and results of geologic logging are depicted on the attached map. Each trench was photo-documented using digital photography. Each trench was observed by professional peers including California State Certified Engineering Geologists employed with Seward Engineering Geology, Inc., California Geologic Survey, and County of Orange. The interpretations of geology exposed in the trenches, including the location of the main strand of the Whittier Fault, were discussed and found to be in agreement among the geologists who viewed them, and the fault report approved by the County of Orange. A seismic setback zone was established along the northeast of the fault ranging from 50 to 120 feet in width. The layout of residential lots for the development was based on the findings of the study and location of the setback zone.

Prior to collection of in-situ bedrock samples, we conducted several preliminary slope stability analyses using strength data from the nearby Casino Ridge Development. The sections are noted as A-A', D-D', H-H', N-N', O-O' and K-K'. It is important to understand that these analyses were not conducted using site specific data. The purpose of these analyses was to provide the client with a general understanding of remedial grading requirements, knowing future site-specific testing would be necessary to derive more pertinent conclusions.

Additional subsurface field exploration activities were conducted by AG for the purpose of evaluating the 100-scale conceptual design for the development. These activities commenced with excavation of 112 shallow test pits which were excavated manually between May and June of 2013. The pits were followed by excavation of 51 deeper trench excavations using a mini-backhoe, accomplished during June of 2013. Subsequent to these activities, still deeper exploration was performed using a combination of 9 truck- and 11 track-mounted "LoDrill" bucket-auger drill-rigs. The track-mounted borings were drilled between July and August of 2013, and the truck-mounted borings in September of the same year. Each of these borings was down-hole logged in detail by a Certified Engineering Geologist on staff with AG. As a result of this work, the absence/presence of several suspected larger landslides were documented and where present, their dimensions constrained. Slightly undisturbed in-situ drive samples of bedrock were obtained during drilling and transported to the laboratory in our corporate office for analysis. To date, laboratory analyses to determine shear strength, consolidation and other engineering parameters have been completed.

As noted on the attached map, a series of geotechnical cross sections were constructed through major slopes proposed under existing development plans. These sections are denoted as A-A', B-B', C-C', D-D', G-G', H-H', H2-H2', N-N', O-O' and K-K', 1-1', 2-2', 3-3', 4-4', 5-5', 6-6'. These sections are nearly in draft form but nearly complete for site-specific stability analysis.

The next step in the project will be to finalize the cross sections and perform engineering analyses to determine slope stability and formulate conclusive remedial grading recommendations.

Should you have any questions please do not hesitate to contact our office.

Respectfully submitted,

AMERICAN GEOTECHNICAL, INC.

Jeff L. Hull

Jeff L. Hull, PG, CEG
Chief Engineering Geologist

JLHI

Enclosures: Plate 1
Distribution: 2 – Addressee (direct delivery)

wpdata/OC/33366-03.JLH.March 12 2014.ExplorationSummary

REFERENCES

1) American Geotechnical, Inc., 2012, *"Fault Hazard Assessment Report, Whittier Fault Zone, Addressing a Portion of the Proposed Esperanza Hills Residential Development Project in the Southeastern Puente Hills, Unincorporated Orange County, Southern California,"* dated November 30, 2012; prepared for Yorba Linda Estates, LLC; Project No. 33366-01; under review by County of Orange as of the time of this proposal.

2) Earth Consultants International, 1998, *"100-scale Geologic Constraints Map and Estimated Thickness of Alluvium and Landslide Debris, Murdock Company Properties near Yorba Linda, Orange County California",* dated February 10, 1998.

3) Seward, Allen E., 2002, *"Status Report for Geologic/Geotechnical Investigation of Yorba Linda Property,"* dated March 27, 2002.

4) Seward, Allen E., 2011, *"Preliminary Geologic Report, "The Preserve", Compilation of Existing Raw Field Data from 2002, Yorba Linda, California",* dated October 10, 2011.

Appendix E –
Noise Impact Analysis
Prepared by Giroux & Associates dated August 1, 2014

NOISE IMPACT ANALYSIS

ESPERANZA HILLS-YORBA LINDA ESTATES

CITY OF YORBA LINDA, CALIFORNIA

Prepared for:

Yorba Linda Estates, LLC
Attn: Douglas Wymore
7114 East Stetson Drive, Suite 350
Scottsdale, AZ 85251

Date:

August 1, 2014

Project No.: P12-013 N

NOISE SETTING

BACKGROUND

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. Sound is characterized by various parameters that describe the physical properties of sound waves. These properties include the rate of oscillation (frequency), the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level.

The unit of sound pressure ratioed to the faintest sound detectable to a person with normal hearing is called a decibel (dB). Sound or noise can vary in intensity by over one million times within the range of human hearing. A logarithmic loudness scale similar to the Richter Scale for earthquake magnitude is therefore used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all sound frequencies within the entire spectrum. Noise levels at maximum human sensitivity from around 500 to 2,000 cycles per second are factored more heavily into sound descriptions in a process called "A-weighting," written as "dBA."

Leq is a time-averaged sound level; a single-number value that expresses the time-varying sound level for the specified period as though it were a constant sound level with the same total sound energy as the time-varying level. Its unit is the decibel (dB). The most common averaging period for Leq is hourly.

Because community receptors are more sensitive to unwanted noise intrusion during more sensitive evening and nighttime hours, state law requires that an artificial dBA increment be added to quiet time noise levels. The 24-hour noise descriptor with a specified evening and nocturnal penalty is called the Community Noise Equivalent Level (CNEL). CNEL's are a weighted average of hourly Leq's over a twenty-four hour period with a weighting factor applied to noises occurring during evening hours from 7:00 p.m. to 10:00 p.m. (relaxation hours) and at night from 10:00 p.m. to 7:00 a.m. (sleeping hours) of 5 dBA and 10 dBA, respectively. Ldn is almost equivalent to CNEL except for no application of the 5 dBA evening hour weighting.

PLANNING STANDARDS

Orange County has developed guidelines based on the California State model for acceptable community noise levels that are based upon the CNEL rating scale to insure that noise exposure is considered in any development, as shown in Figure 1. CNEL-based standards apply to noise sources whose noise generation is preempted from local control (such as from on-road vehicles, trains, airplanes, etc.) and are used to make land use decisions as to the suitability of a given site for its intended use. These CNEL-based standards are stated in the Noise Element of the General Plan. Local jurisdictions generally regulate the level of non-transportation noise that one use may impose upon another through a Noise Ordinance.

Figure 1 contains four classes of acceptability and has a number of overlapping compatibility noise levels within several criteria. In order to reduce the potential ambiguity of various conditional acceptabilities, Orange County developed a more clear-cut matrix of acceptable noise levels shown in Table 1 and explained in Table 2.

For new residential uses, Orange County recommends an exterior noise level of up to 65 dB CNEL and an interior noise level of 45 dB CNEL. The exterior level applies to outdoor recreational uses such as back yards, patios, spas, etc. Interior standards apply to habitable rooms. Typical noise attenuation with closed, double-paned windows in modern frame and stucco construction is about 20-30 dB. Noise attenuation with partially open windows is 10-15 dB CNEL. Interior standards can therefore be readily met without any “extra” mitigation if exterior levels are 55-60 dB CNEL with open windows. With closed dual-paned windows, exterior levels of 65-75 dB CNEL can be accommodated while still meeting interior standards.

The City of Yorba Linda has established similar noise compatibility thresholds as shown below.

Yorba LindaGeneral Plan Land Use Noise Standards (dB CNEL)

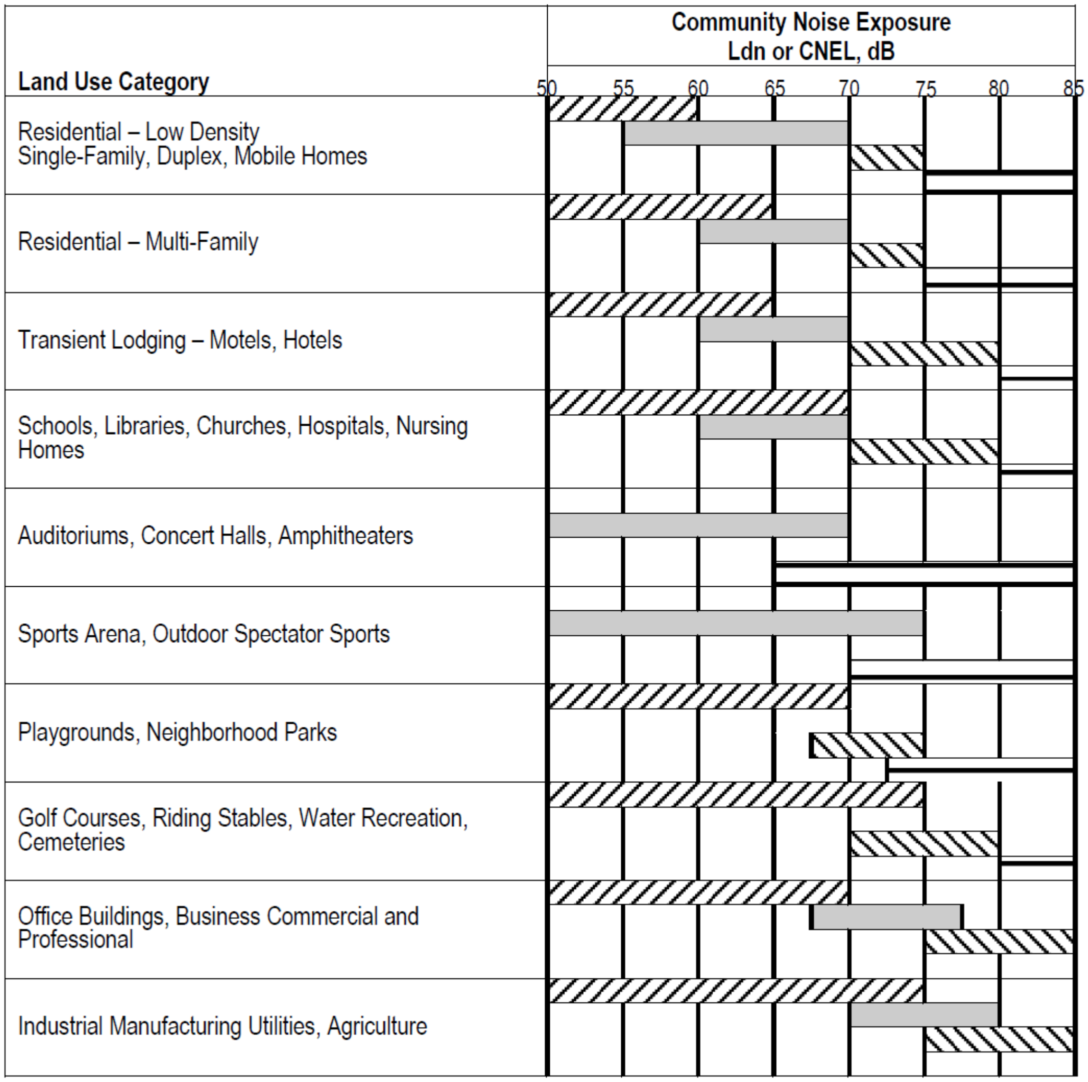
General Plan Land Use Designation	Interior Standard	Exterior Standard
Residential, including public institutions and hospitals	45	65
Neighborhood Commercial	---	70
Office Commercial	50	70
Light Industry/Business Park	55	75
Open Space	--	70

Source: City of Yorba Linda General Plan, 1993, Table N-2

Use of a residential noise standard of 65 dBA CNEL exterior and 45 dB CNEL interior is appropriate for either the County of Orange or City of Yorba Linda jurisdiction.

Figure 1

Orange County Land Use Compatibility Matrix for Community Noise Exposure



INTERPRETATION

Normally Acceptable: Specified land use is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: State of California Governor's Office of Planning and Research, General Plan Guidelines, 1990.

TABLE 1

COMPATIBILITY MATRIX FOR ORANGE COUNTY LAND USES AND COMMUNITY NOISE EQUIVALENT LEVELS (CNEL)

Type of Use	65+ dB CNEL	60-65 dB CNEL
Residential	3a, b, e	2a, e
Commercial	2c	2c
Employment	2c	2c
Open Space		
Local	2c	2c
Community	2c	2c
Regional	2c	2c
Educational Facilities		
School (K through 12)	2c, d, e	2c, d, e
Preschool, college, other	2c, d, e	2c, d, e
Places of Worship	2c, d, e	2c, d, e
Hospitals		
General	2a, c, d, e	2a, c, d, e
Convalescent	2a, c, d, e	2a, c, d, e
Group Quarters	1a, b, c, e	2a, c, e
Hotels/Motels	2a, c	2a, c
Accessory Uses		
Executive Apartments	1a, b, e	2a, e
Caretakers	1a, b, c, e	2a, c, e

Table 2
Explanation and Definitions

Action Required to Ensure Compatibility
Between Land use and Noise from External Sources

1. Allowed if interior and exterior community noise levels can be mitigated.

2. Allowed if interior levels can be mitigated.

3. New residential uses are prohibited in areas within the 65-decibel CNEL contour from any airport or air station; allowed in other areas if interior and exterior community noise levels can be mitigated. The prohibition against new residential development excludes limited "in-fill" development within an established neighborhood

Standards Required for Compatibility of Land Use and Noise

a. Interior Standard: CNEL of less than 45-decibels (habitable rooms only).

b. Exterior Standard: CNEL of less than 65-decibels in outdoor living areas.

c. Interior Standard: Leq(h)=45 to 65 decibels interior noise level, depending on interior use.

d. Exterior Standard: Leq(h) of less than 65 decibels in outdoor living areas.

e. Interior Standard: As approved by the Board of Supervisors for sound events of short duration such as aircraft fly-over's or individual passing railroad trains.

Leq (h) – The A-weighted equivalent sound level averaged over a period of "h" hours. An example would be Leq (12) where the equivalent sound level is the average over a specified 12-hour period (such as 7:00 a.m. to 7:00 p.m.). Typically, time period "h" is defined to match the hours of operation of a given type of use.

ORANGE COUNTY NOISE STANDARDS

The County's noise standards for non-transportation sources are articulated in the Noise Ordinance. Noise from one land use, crossing the property line of an adjacent property, are regulated by Division 6, Section 4-6 of the Orange County Code. The Orange County Code, as seen in Table 3, limits noise levels to 55 dB(A) during the day and 50 dB(A) night at any residential property line from noise generated on an adjacent property with some allowable deviation for specified periods of time. The larger the deviation from the baseline standard, the shorter the allowed duration of the event up to a maximum of 20 dB. After 10 p.m., all the above thresholds are decreased by 5 dB. The City of Yorba Linda has established identical noise standards (55 dBA daytime and 50 dBA night).

Construction noise requirements are also discussed in the Orange County Noise Ordinance. The weekday (including Saturday) hours from 7 a.m. to 8 p.m. are the times allowed in the Orange County Noise Ordinance for construction or grading. Division 6 (Sec. 4-6-1, et seq.) of the County Code also contains standard requirements related to the distance separation between construction activities and any occupied dwellings. Construction noise levels are exempt from the numerical performance standards in the noise ordinance. However, EMA's "Standard Condition for Approval" N10 requires that:

1. All powered equipment operating within 1,000 feet of a dwelling must have a properly operating and maintained muffler.
2. Stockpiling and staging activities must be located as far as practicable from dwellings

The City of Yorba Linda similarly exempts construction related activities from noise regulations provided the activities take place between the hours of 7 a.m. to 8 p.m. on weekdays, including Saturday. No construction is allowed at any time on Sunday or on a federal holiday. Orange County and the City of Yorba Linda have identical regulations with regards to permissible hours of construction activity.

Table 3

Orange County

Residential Exterior Noise Standards

Noise Zone	*Noise Level*	*Time Period*
1	*55 dB(A)*	*7:00 a.m.--10:00 p.m.*
	50 dB(A)	*10:00 p.m.-- 7:00 a.m.*

It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed:

- The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or
- +5 dB for a cumulative period of more than 15 minutes in any hour, or
- +10 dB for a cumulative period of more than 5 minutes in any hour, or
- +15 dB for a cumulative period of more than 1 minute in any hour, or
- +20 dB or the maximum measured ambient level for any period of time.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the noise levels shall be reduced by five (5) dB(A).

In the event the ambient noise level exceeds any of the noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise levels.

BASELINE NOISE LEVELS

Existing noise levels on the proposed project site derive mainly from vehicular sources on the adjacent roadways. Short term on-site noise measurements were conducted on Tuesday November 6, 2012 from 2:00 p.m. – 3:00 p.m. at two locations. Measurement locations are shown in Figure 2 and the monitoring results are summarized below.

Measured Noise Levels (dBA)

	Leq	Lmax	Lmin	L10	L33	L50	L90
Meter 1	46.3	63.0	39.0	45.5	42.0	41.5	40.0
Meter 2	56.6	69.0	39.0	61.5	53.5	47.0	41.0

Meter 1 was located along Aspen Way close to the project access roadway extension. Results for Meter 1 show that existing noise levels are quite low with observed noise readings at Meter 1 of 46 dB Leq. Monitoring experience shows that 24-hour weighted CNELs can be reasonably well estimated from mid-afternoon noise readings. CNEL's are approximately equal to mid-afternoon Leq plus 2-3 dB (Caltrans Technical Noise Supplement, 2009). This would equate to an existing CNEL of 48-49 dB at the proposed site. Such levels are well within Orange County residential compatibility guidelines.

The Meter 2 location is along San Antonio Road, south of Aspen Way. Observed Leqs at this location of almost 57 dB would equate to a CNEL of 59-60 dB. These readings demonstrate that existing ambient noise levels in the project area are low and do not propose an impediment to the proposed residential development though project development could impose a significant noise impact on existing uses. These low baseline levels do suggest, however, that the proposed project area is sensitive to even a moderate increase in traffic noise.

Figure 1
Noise Meter Locations

Meter 1: Eastern terminus of Aspen Way.

Meter 2: West side of San Antonio Rd, approximately 500 feet south of Aspen Way intersection. Next to driveway of 4465 and 4485 San Antonio (west side of roadway). Meter placed 50 feet to San Antonio centerline.

NOISE IMPACTS

NOISE SIGNIFICANCE CRITERIA

Noise impacts are considered significant if they result in:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

STANDARDS OF SIGNIFICANCE

Noise impacts are considered significant if they expose persons to levels in excess of standards established in local general plans or noise ordinances. The exterior noise standard for Orange County for residential uses is 65 dBA CNEL in usable outdoor space. If required, attenuation through setback and project perimeter barriers is anticipated to be used to reduce traffic noise to the 65 dBA CNEL goal. However, an inability to achieve this goal through the application of reasonably available mitigation measures would be considered a significant impact.

In addition, noise impacts may also be considered significant if they create either a substantial permanent or temporary increase above ambient noise levels. The term "substantial" is not quantified in CEQA guidelines. In most environmental analyses, "substantial" is taken to mean a level that is clearly perceptible to humans. In practice, this is at least a +3 dB increase. Some agencies, such as Caltrans, require substantial increases to be +10 dB or more if noise standards are not exceeded by the increase. For purposes of this analysis, a +3 dB increase is considered a significant increase if it causes the residential noise/land use guidelines of 65 dBA CNEL to be exceeded. In addition, an increase of 10 dB would be considered significant even if the residential noise/land use guidelines of 65 dBA CNEL is not exceeded. The following noise impacts due to project-related traffic would be considered significant:

1. If construction activities were to audibly intrude into adjacent residential areas during periods of heightened noise sensitivity.

2. If project traffic noise were to cause an increase by a perceptible amount (+3 dB CNEL) and expose receivers to levels exceeding the Orange County compatibility noise standards.

3. If project traffic noise were to cause an increase by 10 dB even if noise levels do not exceed the Orange County compatibility noise standards. This 10 dB threshold is considered appropriate in this instance because the existing ambient noise levels are very low.

CONSTRUCTION NOISE IMPACTS

Heavy Equipment

Temporary construction noise impacts will vary markedly because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. Short-term construction noise impacts tend to occur in discrete phases dominated initially by grading activities, then by foundation and construction. The earth-moving sources are the noisiest, with equipment noise typically ranging from 75 to 90 dBA at 50 feet from the source.

Figure 2 shows the range of noise emissions for various pieces of construction equipment. Point sources of noise emissions are attenuated by a factor of 6 dBA per doubling of distance through geometrical (spherical) spreading of sound waves. The quieter noise sources will drop to a 65 dBA exterior/45 dBA interior noise level by about 200 feet from the source while the loudest may require over 1,000 feet from the source to reduce the 90+ dBA source strength to a generally acceptable 65 dBA exterior exposure level. This estimate assumes a clear line-of-sight from the source to the receiver. Variations in terrain elevation or existing structures will act as noise barriers that may interrupt equipment noise propagation. Construction noise impacts are, therefore, somewhat less than that predicted under idealized input conditions

There are noise-sensitive receivers within 1,000 feet of planned construction activities. FHWA has developed a construction activity noise model that is an industry standard for assessing construction activity noise impacts.

Quantitatively, the primary noise prediction equation is expressed as follows for the hourly average noise level (Leq) at distance D between the source and receiver (dBA):

Leq = Lmax @ 50’ – 20 log (D/50’) + 10log (U.F%/100) – I.L.(bar)

Where:

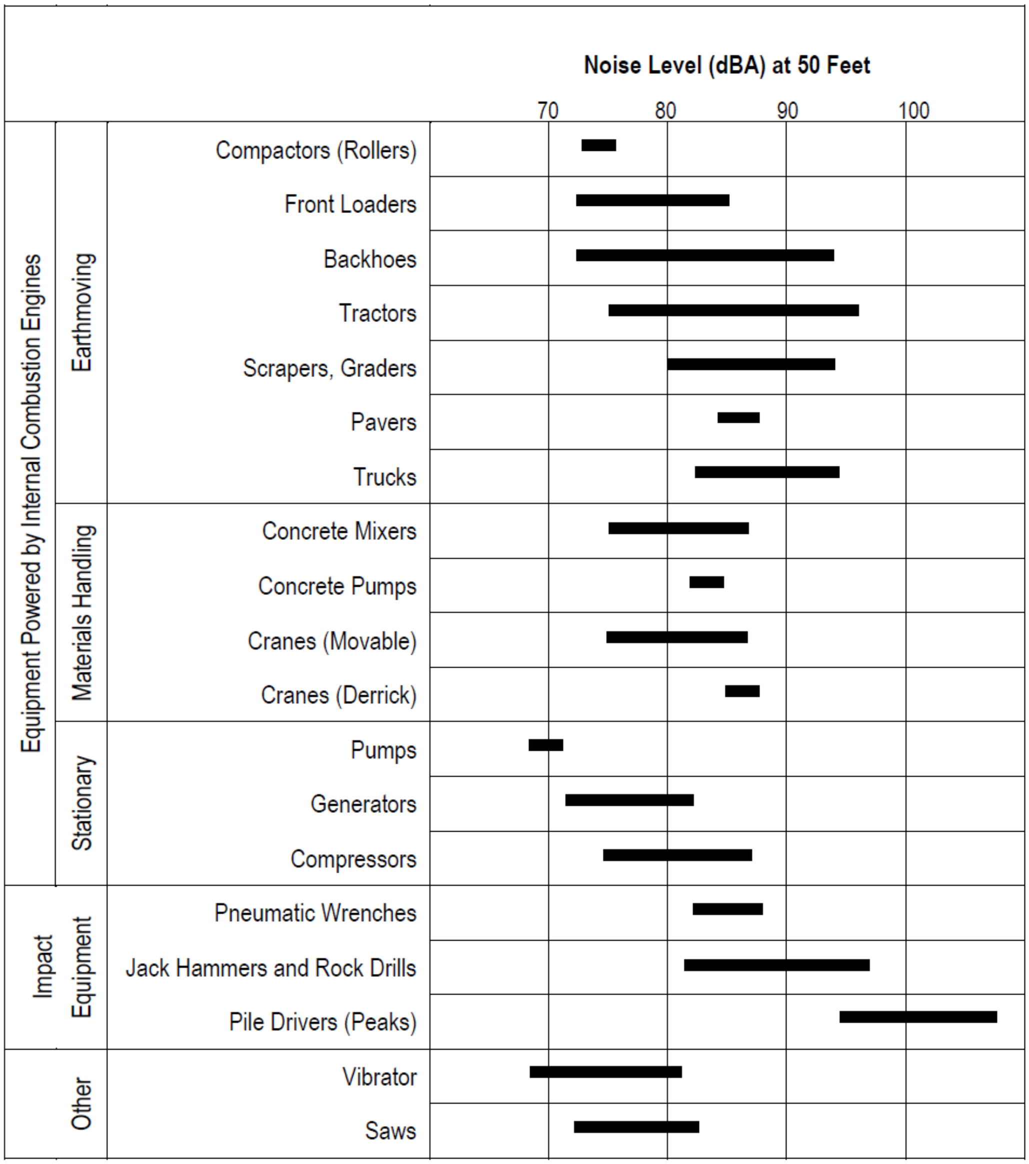
Lmax @ 50’ is the published reference noise level at 50 feet
U.F.% is the usage factor for full power operation per hour
I.L.(bar) is the insertion loss for intervening barriers

Published reference noise levels for heavy construction equipment used in clearing, excavation and grading include the following:

Dozers 85 dBA
Tractors 80 dBA
Backhoes 86 dBA
Excavators 86 dBA
Graders 86 dBA
Source: Noise Control for Buildings…, BBN, 1987

Figure 2

Typical Construction Equipment Noise Generation Levels



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."

Assuming three large pieces of equipment operate in close proximity, their combined Lmax reference level is 91 dBA at 50 feet. Under a clear line of sight and a typical usage factor of 40 percent, the hourly noise level as a function of distance is as follows:

Distance to Source	Hourly Level
100 feet	81 dBA
200 feet	75 dBA
300 feet	71 dBA
400 feet	69 dBA
500 feet	67 dBA
640 feet	65 dBA
800 feet	63 dBA
1000 feet	61 dBA

Levels of 65 dBA can interfere with comfortable conversation and levels of 75 dBA can intrude into quiet interior activities such as reading or children napping even with closed windows. Typically, noise levels at adjacent residential uses will not reach 75 dBA Leq during construction. Equipment noise may reach 65 dBA at the closest existing homes at 600 feet from any Esperanza Hills lot. However, completed structures, possible perimeter walls and terrain shielding will reduce the construction noise footprint. County policy is therefore to restrict construction activities involving heavy equipment to hours of lesser residential sensitivity if occupied residences are nearby.

According to Orange County Municipal Code, permissible hours of construction are 7 a.m. to 8 p.m. on weekdays and on Saturdays. Construction is not permitted on any national holiday or on any Sunday. These hours are included as conditions on any project construction permits and these limits will serve to minimize any adverse construction noise impact potential.

Although construction noise impacts are considered less-than-significant, and mitigation measures are not required, the following construction practices are recommended to further reduce construction noise levels:

- All mobile equipment should have properly operating and maintained mufflers.
- Possible haul routes should avoid residential development, where feasible.
- Noise-generating construction equipment should be placed in staging areas as far as possible from existing residences.
- High noise-producing activities should be scheduled between the hours of 8:00 a.m. and 5:00 p.m. to minimize disruption to sensitive uses.
- Construction related equipment including heavy-duty equipment should be turned off when not in use for more than 5 minutes consistent with California Air Resources Board requirements.
- Construction hours, allowable workdays, and the phone number of the job superintendent should be clearly posted at all construction entrances to allow for surrounding residents to contact the job superintendent. If the County of Orange or the

job superintendent receives a complaint, the superintendent should investigate, take appropriate corrective action, and report the action taken to the reporting party. Contact specifications should be included in the proposed project construction documents, which shall be revised by the County of Orange prior to issuance of a grading permit.

Movement of Construction Equipment and Workers

In addition to equipment noise, the movement of equipment and workers onto the project site during construction would generate temporary traffic noise along access routes to the project areas. The major pieces of heavy equipment moving into the development areas could also impact currently low ambient noise levels.

Depending upon final site design and property availability, several alternative access points options have been developed. Construction vehicle access could therefore utilize different site entries/exits, however the following three access points were considered where construction traffic noise was calculated as follows:

Option 1	Stonehaven Way	– 50 feet to receiver
Option 2	Aspen Way	– 50 feet to receiver
Option 2A	San Antonio (S of Aspen)	– 250 feet to receiver

The CalEEMod computer model predicts the peak construction day which will be the most intensive traffic period in terms of worker traffic, vendor trucks and heavy-duty diesel vehicles delivering equipment and building supplies. The forecast peak daily traffic is as follows:

Worker Trips	– 136/day
Vendor (Medium) Trucks	– 20/day
Vendor (Heavy) Trucks	– 20/day

Construction worker commuting and vendor delivery noise was calculated by standard noise modeling using the FHWA TNM Version 2.5. As a conservative approach is was assumed that half of the daily 136 construction worker trips could arrive or depart in a peak hour and that 5 medium truck trips and 4 heavy trucks truck trips could also occur during the same peak hour.

As shown in the report appendix, TNM calculates the noise level at 50 feet from roadway centerline to be 53 dB Leq for the indicated peak hourly site access vehicle volume of 68 light duty cars, 5 medium trucks and 4 heavy duty trucks. If the peak traffic occurred for 5 hours per day during daytime hours, the calculated CNEL is 46 dB at 50 feet from roadway centerline.

The measured daytime baseline noise level was 46 dB Leq. CNELs are typically 2-3 dB higher than daytime Leq levels (because of nocturnal noise penalties in the CNEL calculation). A background level of 49 dB CNEL is considered representative at homes near candidate access points. The Orange County General Plan standard for usable outdoor residential space is 65 dB CNEL.

The calculated noise from movement of construction workers and vendor deliveries is expected to be lower than the background CNEL and much lower than the standard for outdoor residential space.

Peak construction activity traffic will be temporary. Significance thresholds relate to chronic conditions such that construction noise is generally exempt from noise ordinance performance standards if the activity is restricted to hours of lesser sensitivity. Parking locations and staging areas have not been determined, but Orange County Standard Conditions require selection of such areas as to minimize noise intrusion into surrounding development.

CONSTRUCTION ACTIVITY VIBRATION

Typical background vibration levels in residential areas are usually 50 VdBA or lower, below the threshold of human perception. Perceptible vibration levels inside residences are typically attributed to the operation of heating and air conditioning systems, door slams or street traffic. Construction activities and street traffic are some of the most common external sources of vibration that can be perceptible inside residences.

Construction activities generate ground-borne vibration when heavy equipment travels over unpaved surfaces or when it is engaged in soil movement. The effects of ground-borne vibration include discernable movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. Vibration related problems generally occur due to resonances in the structural components of a building because structures amplify groundborne vibration. Within the "soft" sedimentary surfaces of much of Southern California, ground vibration is quickly damped out. Groundborne vibration is almost never annoying to people who are outdoors (FTA 2006).

Groundborne vibrations from construction activities rarely reach levels that can damage structures. Because vibration is typically not an issue, very few jurisdictions have adopted vibration significance thresholds. Vibration thresholds have been adopted for major public works construction projects, but these relate mostly to structural protection (cracking foundations or stucco) rather than to human annoyance.

Vibration is most commonly expressed in terms of the root mean square (RMS) velocity of a vibrating object. RMS velocities are expressed in units of vibration decibels. The range of vibration decibels (VdBb) is as follows:

65 VdBb	-	threshold of human perception
72 VdB	-	annoyance due to frequent events
80 VdBb	-	annoyance due to infrequent events
94-98 VdBb	-	minor cosmetic damage

To determine potential impacts of the project's construction activities, estimates of vibration levels induced by the construction equipment at various distances are presented in Table 4.

Table 4
Approximate Vibration Levels Induced by Construction Equipment

	Approximate Vibration Levels (VdBA)*				
Equipment	**25 feet**	**50 feet**	**100 feet**	**600 feet**	**1000 feet**
Large Bulldozer	87	81	75	59	55
Loaded Truck	86	80	74	58	54
Jackhammer	79	73	67	51	47
Small Bulldozer	58	52	46	30	26

* (FTA Transit Noise & Vibration Assessment, Chapter 12, Construction, 2006)

The on-site construction equipment that will create the maximum potential vibration is a large bulldozer. The stated vibration source level in the FTA Handbook for such equipment is 81 VdB at 50 feet from the source. The nearest existing residence is approximately 600 feet from the closest Esperanza Hills lot. By 600 feet the vibration level dissipates to 59 VdB which is below the threshold of human perception. Most construction equipment will operate at even greater distance separation. Construction activity vibration impacts are judged as less-than-significant.

PROJECT-RELATED VEHICULAR NOISE IMPACTS

Long-term noise concerns from the development of residential uses at the project site center primarily on mobile source emissions on project area roadways. These concerns were addressed using the California specific vehicle noise curves (CALVENO) in the federal roadway noise model (the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108). The model calculates the Leq noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, roadway speeds, or noise barriers. The typical Orange County day-night travel percentages and auto-truck vehicle mixes is then applied to convert one-hour Leq levels to a weighted 24-hour CNEL.

The hourly traffic flow distributions (vehicle mix) used in this analysis for calculation of the hourly distribution percentages of automobile, medium trucks and heavy trucks are as follows:

Orange County Motor Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Automobiles	77.5%	23.9%	9.9%	97.42%
Medium Trucks	84.8%	4.9%	10.3%	1.84%`
Heavy Trucks	86.5%	2.7%	10.8%	0.74%

Table 5 summarizes the calculated 24-hour CNEL level at 50 feet from the roadway centerline along project adjacent roadway segments. Three time frames were evaluated; existing conditions with and without project, year 2020 with and without project, and 2035 with and without project. Three project alternatives were evaluated with differing project access points.

Option 1 provides site access via Stonehaven Drive

Option 2 via Aspen Way

Option 2A via San Antonio Road approximately 1,850 feet south of Aspen Way

The noise analysis utilized data from the project traffic analysis, prepared by Linscott Law & Greenspan, Inc, in March 2013, for this project. Vehicular traffic volumes and roadway travel speeds were obtained from the traffic report. With a project this large it is very unlikely that build-out would occur immediately. By 2020 and 2035, when area build-out occurs, the projects impacts are diluted and not as significant as contrasting with existing conditions. Nevertheless, existing conditions are overlaid with project traffic as a worst case impact analysis.

As expected, each option will cause a perceptible noise increase along the primary access route. Option 1 causes up to a +7.4 dB traffic noise impact along Via del Agua. However, even at area build-out in 2035 the "with project" traffic noise levels at 50 feet from the roadway centerline are less than 65 dB CNEL, the recommended compatibility threshold for sensitive uses. Therefore this is not considered a significant impact.

If all project traffic site egress and ingress were via Aspen Way as per Option 2, because current utilization use of Aspen Way is low, addition of all project traffic, in the existing time frame, could create as much as a +14.6 dB CNEL increase at 50 feet from roadway centerline. By 2020, this increase is reduced to +10.6 dB CNEL and to +8.4 dB CNEL in 2035. Although this impact is considered substantial, the overall noise level, even in 2035 is less than the 65 dB CNEL residential exterior noise compatibility threshold (assuming a 25 mph travel speed) at 50 feet from the roadway centerline. Although traffic noise impacts would be noticeable as compared to no project alternatives, area traffic noise levels, even on Aspen Way, would remain below 65 dB CNEL. There are two residences within 50 feet of the Aspen Way centerline such that these residences would be expected to experience the full 58 dB CNEL noise level in the future as compared to 43 dB CNEL currently. This noise impact on Aspen Way is considered a significant increase in ambient noise levels even though the 65 dB CNEL compatibility threshold is not exceeded, because the increase is greater than 10 dB and the existing ambient noise levels are very low.

Option 2 could also cause a perceptible impact along San Antonio Road between Aspen Way and Yorba Linda Blvd. Residences along the eastern alignment with this section of San Antonio Road are set back from the roadway centerline by more than 100 feet which reduces the “2035 with project” noise levels at the nearest residence to 59 dB CNEL, also less than the 65 dB CNEL compatibility threshold. Therefore this impact at San Antonio Road between Aspen Way and Yorba Linda Blvd is not considered significant.

Option 2A would impact the same San Antonio Road residences as in Option 2 between the proposed project access point at San Antonio Road and Yorba Linda Blvd. The impact for the eastern roadway residences is the same as with Option 2, as project traffic would pass by these homes under either alternative. Since the impacted residences are more than 100 feet from the roadway centerline, the “2035 with project” impact, even at build-out, is not expected to reach exceed 57 dB CNEL. Therefore, this is not considered a significant impact.

Option 2A would be expected to produce the least project related traffic noise impact. The largest traffic noise impacts for this scenario range from +4.1 to +4.4 dB CNEL. Although larger than the +3 dB CNEL threshold, the only impacted residences are setback 100 feet from the roadway and would experience future traffic noise levels well below the Orange County General Plan standard. Although there are several residences along the west side of the roadway, these homes have a nearly 150 foot setback from the centerline and have a perimeter noise wall. Project related traffic noise impacts for Option 2A are not considered significant.

Although all access options would result in a perceptible noise increase over existing conditions to a number of residences, the overall traffic noise environment remains below 65 dB CNEL. However, noise levels along Aspen Way under Option 2 will exceed 10 dB in the near term and in year 2020, and that noise increase is considered a significant impact. The project traffic noise levels for Option 1 and Option 2A are not considered significant.

Table 5
Near Term Traffic Noise Impact Analysis
(CNEL in dB at 50 feet from Centerline)

Road Segment		***Existing***	***Existing + Option 1***	***Existing + Option 2***	***Existing + Option 2A***	***Existing Impacts Option 1***	***Existing Impacts Option 2***	***Existing Impacts Option 2A***
Yorba Linda Blvd/	Imperial Hwy-Kellog Dr	70.7	70.9	70.9	70.9	0.2	0.2	0.2
	Village Center-San Antonio	70.7	71.0	71.0	71.0	0.3	0.3	0.3
	San Antonio-La Palma	70.7	70.7	70.9	70.9	0.0	0.2	0.2
Weir Canyon/	E of La Palma	74.0	74.1	74.1	74.1	0.1	0.1	0.1
San Antonio Rd/	N of Yorba Linda Blvd	56.4	-	60.7	60.7	-	**4.4**	**4.4**
Aspen Way/	E of San Antonio	43.3	-	57.9	-	-	**14.6**	-
Via Del Agua/	W of Site Ent	52.3	59.7	-	-	**7.4**	-	-
	N of Yorba Linda Blvd	55.6	60.5	-	-	**4.9**	-	-
Stonehaven Dr	E of Site Ent	56.0	59.0	-	-	3.0	-	-
	N of Yorba Linda Blvd	58.0	60.2	-	-	2.2	-	-

2020 Traffic Noise Impact Analysis
(CNEL in dB at 50 feet from Centerline)

Road Segment		***2020***	***2020 + Option 1***	***2020 + Option 2***	***2020 + Option 2A***	***2020 Impacts Option 1***	***2020 Impacts Option 2***	***2020 Impacts Option 2A***
Yorba Linda Blvd/	Imperial Hwy-Kellog Dr	71.4	71.5	71.5	71.5	0.1	0.1	0.1
	Village Center-San Antonio	71.1	71.4	71.4	71.4	0.3	0.3	0.3
	San Antonio-La Palma	71.2	71.2	71.4	71.4	0.0	0.2	0.2
Weir Canyon/	E of La Palma	74.5	74.6	74.6	74.6	0.1	0.1	0.1
San Antonio Rd/	N of Yorba Linda Blvd	56.9	-	61.0	61.0	-	**4.1**	**4.1**
Aspen Way/	E of San Antonio	47.6	-	58.2	-	-	**10.6**	-
Via Del Agua/	W of Site Ent	52.6	59.8	-	-	**7.2**	-	-
	N of Yorba Linda Blvd	58.3	61.6	-	-	**3.3**	-	-
Stonehaven Dr	E of Site Ent	56.2	59.2	-	-	3.0	-	-
	N of Yorba Linda Blvd	58.4	60.4	-	-	2.0	-	-

2035 Traffic Noise Impact Analysis
(CNEL in dB at 50 feet from Centerline)

Road Segment		***2035***	***2035 + Option 1***	***2035 + Option 2***	***2035 + Option 2A***	***2035 Impacts Option 1***	***2035 Impacts Option 2***	***2035 Impacts Option 2A***
Yorba Linda Blvd/	Imperial Hwy-Kellog Dr	72.2	72.3	72.3	72.3	0.1	0.1	0.1
	Village Center-San Antonio	71.1	71.4	71.4	71.4	0.3	0.3	0.3
	San Antonio-La Palma	71.8	71.8	72.0	72.0	0.0	0.2	0.2
Weir Canyon/	E of La Palma	74.9	75.0	75.0	75.0	0.1	0.1	0.1
San Antonio Rd/	N of Yorba Linda Blvd	57.1	-	61.7	61.7	-	**4.6**	**4.6**
Aspen Way/	E of San Antonio	50.1	-	58.5	-	-	**8.4**	-
Via Del Agua/	W of Site Ent	55.5	60.5	-	-	**5.0**	-	-
	N of Yorba Linda Blvd	60.0	62.5	-	-	2.5	-	-
Stonehaven Dr	E of Site Ent	58.6	60.5	-	-	1.9	-	-
	N of Yorba Linda Blvd	60.7	62.0	-	-	1.3	-	-

ON-SITE NOISE EXPOSURE

Measured on-site noise levels indicate that no mitigation is required to ensure that proposed Esperanza Hills residences are exposed to noise levels within the Orange County General Plan compatibility guidelines. Projected noise levels along the most concentrated point of project access/egress would be less than 65 dB CNEL at 50 feet from the roadway centerline. Internal roadway traffic noise along more dispersed travel routes would be even farther below the County guidelines for residential use.

NOISE IMPACT SUMMARY AND MITIGATION

Short-term construction noise intrusion and vibration impacts will be limited by conditions on construction permits requiring compliance with the Orange County Noise Ordinance. The allowed hours of construction are 7 a.m. and 8 p.m. on weekdays and Saturdays. Construction is not permitted on any national holiday or on any Sunday. In addition the following construction practices are recommended:

- All mobile equipment should have properly operating and maintained mufflers.
- Possible haul routes should avoid residential development, where feasible.
- Noise-generating construction equipment and construction staging areas should be located as far as possible from existing residences.
- High noise-producing activities should be scheduled between the hours of 8:00 a.m. and 5:00 p.m. to minimize disruption to sensitive uses.
- Construction noise reduction methods such as shutting off idling equipment, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. Unattended construction vehicles shall not idle for more than 5 minutes when located within 500 feet from residential properties.
- Construction hours, allowable workdays, and the phone number of the job superintendent should be clearly posted at all construction entrances to allow for surrounding residents to contact the job superintendent. If the County of Orange or the job superintendent receives a complaint, the superintendent should investigate, take appropriate corrective action, and report the action taken to the reporting party. Contact specifications should be included in the proposed project construction documents, which shall be revised by the County of Orange prior to issuance of a grading permit.

When construction details are finalized, noise impacts along anticipated travel routes should be evaluated for noise impacts due to construction crew commuting, vendor deliveries and equipment mobilization. At the current time, all excess earthworks for both Option 1 and Option 2 will be transported to an adjacent site requiring no on-road haul.

The project noise impact study indicates a traffic noise increase from project-related traffic of greater than 10 dB CNEL on Aspen Way in Option 2 for both the existing and future time period. Therefore, under Option 2, the traffic noise impact on Aspen Way is considered a significant increase in ambient noise levels.

Project related traffic noise impacts are expected to greatly exceed the +3 dB CNEL perception threshold at 50 feet from the roadway centerline under Option 1 and 2A along several roadway segments. However, overall traffic noise is expected to be less than 65 dB CNEL at 50 feet from centerline along these roadways which is less than the General Plan noise compatibility guidelines for residential use. Therefore, there is no impact under Option 1 and 2A because noise will remain under 65 dB CNEL and increases will be less than 10 dB.

Option 2A (San Antonio Road) is predicted to create the smallest traffic noise impact of all project options. With this option, the only segment with a perceptible noise increase is on San Antonio Road north of Yorba Linda Blvd. Homes along this segment are sufficiently setback from the road such that even future traffic noise levels are calculated to be less than 57 dB CNEL at 100 feet from roadway centerline.

Homes within the Esperanza Hills development are anticipated to be within the Orange County noise compatibility guidelines with no special mitigation requirements. Since the City of Yorba Linda establishes identical guidelines regarding permissible hours of construction activity, any conditions applied to Orange County will be sufficient to meet the City of Yorba Linda requirements.

APPENDIX

- Field Sheets for Noise Monitoring
- Traffic Noise Modeling Output Files
- TNM Output Construction Commuting Noise

Existing - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	1					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	26,219				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.17	66.41	60.35	69.58	Auto	68.15	66.39	60.33	69.56
Medium Trucks	60.23	53.87	52.32	61.01	Medium Trucks	60.22	53.86	52.31	61.01
Heavy Trucks	61.16	52.12	53.37	61.85	Heavy Trucks	61.15	52.11	53.36	61.84
	69.51	66.79	61.68	70.75		69.49	66.77	61.66	70.73

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.56	61.01	61.84	**70.73**

Existing - Yorba Linda Blvd/Village Center-San Antonio

Case	2					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	25,911				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.12	66.36	60.30	69.53	Auto	68.10	66.33	60.28	69.51
Medium Trucks	60.18	53.81	52.27	60.96	Medium Trucks	60.17	53.81	52.26	60.96
Heavy Trucks	61.11	52.07	53.32	61.80	Heavy Trucks	61.10	52.06	53.31	61.79
	69.46	66.74	61.63	70.69		69.44	66.72	61.61	70.68

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.51	60.96	61.79	**70.68**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Existing - Yorba Linda Blvd/San Antonio-La Palma

Case	3					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	25,889				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.12	66.35	60.30	69.53	Auto	68.10	66.33	60.28	69.50
Medium Trucks	60.17	53.81	52.27	60.96	Medium Trucks	60.17	53.80	52.26	60.95
Heavy Trucks	61.10	52.07	53.32	61.80	Heavy Trucks	61.09	52.06	53.31	61.79
	69.45	66.74	61.63	70.69		69.43	66.72	61.61	70.67

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.50	60.95	61.79	**70.67**

Existing - Weir Canyon/E of La Palma

Case	4					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	41,233				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	71.64	69.87	63.82	73.05	Auto	71.62	69.85	63.80	73.03
Medium Trucks	62.99	56.63	55.09	63.78	Medium Trucks	62.99	56.63	55.08	63.77
Heavy Trucks	63.62	54.59	55.84	64.32	Heavy Trucks	63.62	54.58	55.83	64.31
	72.76	70.20	64.94	74.02		72.74	70.18	64.92	74.01

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.03	63.77	64.31	**74.01**

Giroux and Associates
Analyst: Sara Gerrick
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Existing - San Antonio Rd/N of Yorba Linda Blvd

Case	5					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	2,610				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	52.25	50.49	44.43	53.66	Auto	52.23	50.47	44.41	53.64
Medium Trucks	47.01	40.65	39.10	47.79	Medium Trucks	47.00	40.64	39.09	47.79
Heavy Trucks	50.84	41.80	43.05	51.53	Heavy Trucks	50.83	41.79	43.04	51.52
	55.31	51.42	47.49	56.38		55.29	51.40	47.47	56.37

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	53.64	47.79	51.52	**56.37**

Existing - Aspen Way/E of San Antonio

Case	6					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	128				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	39.16	37.39	31.34	40.57	Auto	39.14	37.37	31.32	40.54
Medium Trucks	33.91	27.55	26.01	34.70	Medium Trucks	33.91	27.54	26.00	34.69
Heavy Trucks	37.74	28.71	29.96	38.44	Heavy Trucks	37.73	28.70	29.95	38.43
	42.21	38.32	34.39	43.29		42.20	38.31	34.38	43.27

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	40.54	34.69	38.43	**43.27**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Existing - Via Del Agua/W of Site Ent

							Auto	Med Truck	Hvy Truck	
Case	7									
Speed	35					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	522					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						
50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	49.46	47.70	41.64	50.87		Auto	49.44	47.68	41.62	50.85
Medium Trucks	42.32	35.96	34.41	43.10		Medium Trucks	42.31	35.95	34.40	43.10
Heavy Trucks	43.65	34.61	35.86	44.34		Heavy Trucks	43.64	34.60	35.85	44.33
	51.09	48.17	43.27	52.30			51.08	48.15	43.25	52.28

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	50.85	43.10	44.33	**52.28**

Existing - Via Del Agua/N of Yorba Linda Blvd

							Auto	Med Truck	Hvy Truck	
Case	8									
Speed	35					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	1,112					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						
50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	52.75	50.98	44.93	54.16		Auto	52.73	50.96	44.91	54.13
Medium Trucks	45.60	39.24	37.70	46.39		Medium Trucks	45.60	39.23	37.69	46.38
Heavy Trucks	46.93	37.90	39.15	47.63		Heavy Trucks	46.92	37.89	39.14	47.62
	54.38	51.46	46.55	55.58			54.36	51.44	46.53	55.57

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	54.13	46.38	47.62	**55.57**

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Existing - Stonehaven Dr/E of Site Ent

Case	9					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	1,197				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	53.07	51.30	45.25	54.48	Auto	53.05	51.28	45.23	54.45
Medium Trucks	45.92	39.56	38.02	46.71	Medium Trucks	45.91	39.55	38.01	46.70
Heavy Trucks	47.25	38.22	39.47	47.95	Heavy Trucks	47.24	38.21	39.46	47.94
	54.70	51.78	46.87	55.90		54.68	51.76	46.85	55.89

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	54.45	46.70	47.94	**55.89**

Existing - Stonehaven Dr/N of Yorba Linda Blvd

Case	10					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	1,966				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	55.22	53.46	47.40	56.63	Auto	55.20	53.44	47.38	56.61
Medium Trucks	48.08	41.71	40.17	48.86	Medium Trucks	48.07	41.71	40.16	48.86
Heavy Trucks	49.41	40.37	41.62	50.10	Heavy Trucks	49.40	40.36	41.61	50.09
	56.85	53.93	49.03	58.06		56.83	53.91	49.01	58.04

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	56.61	48.86	50.09	**58.04**

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Analyst: Sara Gerrick
4/22/2014

Exist+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	11					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	27,087				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.32	66.55	60.49	69.72	Auto	68.29	66.53	60.47	69.70
Medium Trucks	60.37	54.01	52.46	61.15	Medium Trucks	60.36	54.00	52.46	61.15
Heavy Trucks	61.30	52.26	53.51	61.99	Heavy Trucks	61.29	52.25	53.50	61.99
	69.65	66.93	61.82	70.89		69.63	66.91	61.80	70.87

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.70	61.15	61.99	**70.87**

Exist+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	12					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	27,792				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.43	66.66	60.61	69.83	Auto	68.41	66.64	60.58	69.81
Medium Trucks	60.48	54.12	52.57	61.27	Medium Trucks	60.47	54.11	52.57	61.26
Heavy Trucks	61.41	52.37	53.62	62.11	Heavy Trucks	61.40	52.37	53.62	62.10
	69.76	67.05	61.93	71.00		69.74	67.03	61.92	70.98

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.81	61.26	62.10	**70.98**

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Analyst: Sara Gerrick
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Exist+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	13					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	25,962				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.13	66.36	60.31	69.54	Auto	68.11	66.34	60.29	69.52
Medium Trucks	60.18	53.82	52.28	60.97	Medium Trucks	60.18	53.82	52.27	60.96
Heavy Trucks	61.11	52.08	53.33	61.81	Heavy Trucks	61.11	52.07	53.32	61.80
	69.46	66.75	61.64	70.70		69.45	66.73	61.62	70.69

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.52	60.96	61.80	**70.69**

Exist+Project - Weir Canyon/E of La Palma

Case	14					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	42,427				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	71.76	70.00	63.94	73.17	Auto	71.74	69.98	63.92	73.15
Medium Trucks	63.12	56.76	55.21	63.90	Medium Trucks	63.11	56.75	55.20	63.90
Heavy Trucks	63.75	54.71	55.96	64.44	Heavy Trucks	63.74	54.70	55.95	64.43
	72.88	70.32	65.06	74.15		72.87	70.30	65.04	74.13

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.15	63.90	64.43	**74.13**

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Analyst: Sara Gerrick
4/22/2014

Exist+Project - Via Del Agua/W of Site Ent

Case	17			
Speed	35			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	2,873			

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	56.87	55.10	49.05	58.28
Medium Trucks	49.72	43.36	41.82	50.51
Heavy Trucks	51.05	42.02	43.27	51.75
	58.50	55.58	50.67	59.71

Attenuated SPL	Day	Evening	Night	CNEL
Auto	56.85	55.08	49.03	58.26
Medium Trucks	49.72	43.36	41.81	50.50
Heavy Trucks	51.05	42.01	43.26	51.74
	58.48	55.56	50.66	59.69

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.26	50.50	51.74	**59.69**

Exist+Project - Via Del Agua/N of Yorba Linda Blvd

Case	18			
Speed	35			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	3,463			

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	57.68	55.92	49.86	59.09
Medium Trucks	50.53	44.17	42.63	51.32
Heavy Trucks	51.87	42.83	44.08	52.56
	59.31	56.39	51.48	60.52

Attenuated SPL	Day	Evening	Night	CNEL
Auto	57.66	55.89	49.84	59.07
Medium Trucks	50.53	44.17	42.62	51.32
Heavy Trucks	51.86	42.82	44.07	52.55
	59.29	56.37	51.47	60.50

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	59.07	51.32	52.55	**60.50**

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Analyst: Sara Gerrick
4/22/2014

Exist+Project - Stonehaven Dr/E of Site Ent

							Auto	Med Truck	Hvy Truck	
Case	19									
Speed	35					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	2,463					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						
50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	56.20	54.44	48.38	57.61		Auto	56.18	54.41	48.36	57.59
Medium Trucks	49.05	42.69	41.15	49.84		Medium Trucks	49.05	42.69	41.14	49.84
Heavy Trucks	50.39	41.35	42.60	51.08		Heavy Trucks	50.38	41.34	42.59	51.07
	57.83	54.91	50.00	59.04			57.81	54.89	49.99	59.02

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	57.59	49.84	51.07	**59.02**

Exist+Project - Stonehaven Dr/N of Yorba Linda Blvd

							Auto	Med Truck	Hvy Truck	
Case	20									
Speed	35					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	3,232					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						
50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.38	55.62	49.56	58.79		Auto	57.36	55.59	49.54	58.77
Medium Trucks	50.24	43.87	42.33	51.02		Medium Trucks	50.23	43.87	42.32	51.02
Heavy Trucks	51.57	42.53	43.78	52.26		Heavy Trucks	51.56	42.52	43.77	52.25
	59.01	56.09	51.18	60.22			58.99	56.07	51.17	60.20

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.77	51.02	52.25	**60.20**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Exist+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	21
Speed	40
Distance to Receiver	50
Distance to Wall	25
Elevation Change	0
Height of Receiver	5
Hard or Soft Site	Hard
Height of Wall	0
Total Vehicle Volume	27,087

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	68.32	66.55	60.49	69.72
Medium Trucks	60.37	54.01	52.46	61.15
Heavy Trucks	61.30	52.26	53.51	61.99
	69.65	66.93	61.82	70.89

Attenuated SPL	Day	Evening	Night	CNEL
Auto	68.29	66.53	60.47	69.70
Medium Trucks	60.36	54.00	52.46	61.15
Heavy Trucks	61.29	52.25	53.50	61.99
	69.63	66.91	61.80	70.87

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.70	61.15	61.99	**70.87**

Exist+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	22
Speed	40
Distance to Receiver	50
Distance to Wall	25
Elevation Change	0
Height of Receiver	5
Hard or Soft Site	Hard
Height of Wall	0
Total Vehicle Volume	27,792

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	68.43	66.66	60.61	69.83
Medium Trucks	60.48	54.12	52.57	61.27
Heavy Trucks	61.41	52.37	53.62	62.11
	69.76	67.05	61.93	71.00

Attenuated SPL	Day	Evening	Night	CNEL
Auto	68.41	66.64	60.58	69.81
Medium Trucks	60.47	54.11	52.57	61.26
Heavy Trucks	61.40	52.37	53.62	62.10
	69.74	67.03	61.92	70.98

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.81	61.26	62.10	**70.98**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Exist+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	23					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	27,227				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.34	66.57	60.52	69.74	Auto	68.32	66.55	60.50	69.72
Medium Trucks	60.39	54.03	52.48	61.18	Medium Trucks	60.38	54.02	52.48	61.17
Heavy Trucks	61.32	52.28	53.53	62.02	Heavy Trucks	61.31	52.28	53.53	62.01
	69.67	66.96	61.84	70.91		69.65	66.94	61.83	70.89

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.72	61.17	62.01	**70.89**

Exist+Project - Weir Canyon/E of La Palma

Case	24					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	42,427				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	71.76	70.00	63.94	73.17	Auto	71.74	69.98	63.92	73.15
Medium Trucks	63.12	56.76	55.21	63.90	Medium Trucks	63.11	56.75	55.20	63.90
Heavy Trucks	63.75	54.71	55.96	64.44	Heavy Trucks	63.74	54.70	55.95	64.43
	72.88	70.32	65.06	74.15		72.87	70.30	65.04	74.13

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.15	63.90	64.43	**74.13**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Exist+Project - San Antonio Rd/N of Yorba Linda Blvd

							Auto	Med Truck	Hvy Truck	
Case	25									
Speed	25					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	7,147					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						
50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	56.63	54.86	48.81	58.04		Auto	56.61	54.84	48.79	58.01
Medium Trucks	51.38	45.02	43.48	52.17		Medium Trucks	51.38	45.01	43.47	52.16
Heavy Trucks	55.21	46.18	47.43	55.91		Heavy Trucks	55.20	46.17	47.42	55.90
	59.68	55.79	51.86	60.76			59.67	55.77	51.85	60.74

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.01	52.16	55.90	**60.74**

Exist+Project - Aspen Way/E of San Antonio

							Auto	Med Truck	Hvy Truck	
Case	26									
Speed	25					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	3,745					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						
50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	53.82	52.06	46.00	55.23		Auto	53.80	52.03	45.98	55.21
Medium Trucks	48.57	42.21	40.67	49.36		Medium Trucks	48.57	42.21	40.66	49.36
Heavy Trucks	52.41	43.37	44.62	53.10		Heavy Trucks	52.40	43.36	44.61	53.09
	56.88	52.99	49.06	57.95			56.86	52.97	49.04	57.94

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	55.21	49.36	53.09	**57.94**

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Analyst: Sara Gerrick
4/22/2014

Exist+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	31			
Speed	40			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	27,087			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	68.32	66.55	60.49	69.72
Medium Trucks	60.37	54.01	52.46	61.15
Heavy Trucks	61.30	52.26	53.51	61.99
	69.65	66.93	61.82	70.89

Attenuated SPL	Day	Evening	Night	CNEL
Auto	68.29	66.53	60.47	69.70
Medium Trucks	60.36	54.00	52.46	61.15
Heavy Trucks	61.29	52.25	53.50	61.99
	69.63	66.91	61.80	70.87

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.70	61.15	61.99	**70.87**

Exist+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	32			
Speed	40			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	27,792			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	68.43	66.66	60.61	69.83
Medium Trucks	60.48	54.12	52.57	61.27
Heavy Trucks	61.41	52.37	53.62	62.11
	69.76	67.05	61.93	71.00

Attenuated SPL	Day	Evening	Night	CNEL
Auto	68.41	66.64	60.58	69.81
Medium Trucks	60.47	54.11	52.57	61.26
Heavy Trucks	61.40	52.37	53.62	62.10
	69.74	67.03	61.92	70.98

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.81	61.26	62.10	**70.98**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Exist+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	33					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	27,227				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.34	66.57	60.52	69.74	Auto	68.32	66.55	60.50	69.72
Medium Trucks	60.39	54.03	52.48	61.18	Medium Trucks	60.38	54.02	52.48	61.17
Heavy Trucks	61.32	52.28	53.53	62.02	Heavy Trucks	61.31	52.28	53.53	62.01
	69.67	66.96	61.84	70.91		69.65	66.94	61.83	70.89

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.72	61.17	62.01	**70.89**

Exist+Project - Weir Canyon/E of La Palma

Case	34					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	42,427				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	71.76	70.00	63.94	73.17	Auto	71.74	69.98	63.92	73.15
Medium Trucks	63.12	56.76	55.21	63.90	Medium Trucks	63.11	56.75	55.20	63.90
Heavy Trucks	63.75	54.71	55.96	64.44	Heavy Trucks	63.74	54.70	55.95	64.43
	72.88	70.32	65.06	74.15		72.87	70.30	65.04	74.13

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.15	63.90	64.43	**74.13**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Exist+Project - San Antonio Rd/N of Yorba Linda Blvd

Case	35					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	7,147				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	56.63	54.86	48.81	58.04	Auto	56.61	54.84	48.79	58.01
Medium Trucks	51.38	45.02	43.48	52.17	Medium Trucks	51.38	45.01	43.47	52.16
Heavy Trucks	55.21	46.18	47.43	55.91	Heavy Trucks	55.20	46.17	47.42	55.90
	59.68	55.79	51.86	60.76		59.67	55.77	51.85	60.74

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.01	52.16	55.90	**60.74**

2020 - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	41					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,593				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.84	67.08	61.02	70.25	Auto	68.82	67.06	61.00	70.23
Medium Trucks	60.90	54.54	52.99	61.68	Medium Trucks	60.89	54.53	52.98	61.68
Heavy Trucks	61.83	52.79	54.04	62.52	Heavy Trucks	61.82	52.78	54.03	62.51
	70.18	67.46	62.35	71.42		70.16	67.44	62.33	71.40

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.23	61.68	62.51	**71.40**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020 - Yorba Linda Blvd/Village Center-San Antonio

Case	42					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	28,639				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.56	66.79	60.74	69.96	Auto	68.54	66.77	60.71	69.94
Medium Trucks	60.61	54.25	52.70	61.40	Medium Trucks	60.60	54.24	52.70	61.39
Heavy Trucks	61.54	52.50	53.75	62.24	Heavy Trucks	61.53	52.50	53.75	62.23
	69.89	67.18	62.06	71.13		69.87	67.16	62.05	71.11

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.94	61.39	62.23	**71.11**

2020 - Yorba Linda Blvd/San Antonio-La Palma

Case	43					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	29,342				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.66	66.90	60.84	70.07	Auto	68.64	66.87	60.82	70.05
Medium Trucks	60.72	54.35	52.81	61.50	Medium Trucks	60.71	54.35	52.80	61.50
Heavy Trucks	61.65	52.61	53.86	62.34	Heavy Trucks	61.64	52.60	53.85	62.33
	70.00	67.28	62.17	71.23		69.98	67.26	62.15	71.22

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.05	61.50	62.33	**71.22**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020 - Weir Canyon/E of La Palma

Case	44					Auto	Med Truck	Hvy Truck
Speed	45				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	45,840				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.10	70.33	64.28	73.51	Auto	72.08	70.31	64.26	73.49
Medium Trucks	63.45	57.09	55.55	64.24	Medium Trucks	63.45	57.09	55.54	64.23
Heavy Trucks	64.08	55.05	56.30	64.78	Heavy Trucks	64.08	55.04	56.29	64.77
	73.22	70.66	65.40	74.48		73.20	70.64	65.38	74.47

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.49	64.23	64.77	**74.47**

2020 - San Antonio Rd/N of Yorba Linda Blvd

Case	45					Auto	Med Truck	Hvy Truck
Speed	25				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	2,940				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	52.77	51.00	44.95	54.18	Auto	52.75	50.98	44.93	54.16
Medium Trucks	47.52	41.16	39.62	48.31	Medium Trucks	47.52	41.16	39.61	48.30
Heavy Trucks	51.35	42.32	43.57	52.05	Heavy Trucks	51.35	42.31	43.56	52.04
	55.83	51.94	48.00	56.90		55.81	51.92	47.99	56.88

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	54.16	48.30	52.04	**56.88**

2020 - Aspen Way/E of San Antonio

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

Case	46					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	338				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	43.38	41.61	35.56	44.78	Auto	43.36	41.59	35.53	44.76
Medium Trucks	38.13	31.77	30.22	38.92	Medium Trucks	38.12	31.76	30.22	38.91
Heavy Trucks	41.96	32.92	34.17	42.66	Heavy Trucks	41.95	32.92	34.17	42.65
	46.43	42.54	38.61	47.51		46.42	42.52	38.60	47.49

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	44.76	38.91	42.65	**47.49**

2020 - Via Del Agua/W of Site Ent

Case	47					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	564				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	49.80	48.03	41.98	51.21	Auto	49.78	48.01	41.96	51.19
Medium Trucks	42.65	36.29	34.75	43.44	Medium Trucks	42.65	36.29	34.74	43.43
Heavy Trucks	43.98	34.95	36.20	44.68	Heavy Trucks	43.98	34.94	36.19	44.67
	51.43	48.51	43.60	52.64		51.41	48.49	43.59	52.62

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	51.19	43.43	44.67	**52.62**

2020 - Via Del Agua/N of Yorba Linda Blvd

Case	48					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	2,101				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	55.51	53.75	47.69	56.92	Auto	55.49	53.72	47.67	56.90
Medium Trucks	48.36	42.00	40.46	49.15	Medium Trucks	48.36	42.00	40.45	49.15
Heavy Trucks	49.69	40.66	41.91	50.39	Heavy Trucks	49.69	40.65	41.90	50.38
	57.14	54.22	49.31	58.35		57.12	54.20	49.30	58.33

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	56.90	49.15	50.38	**58.33**

2020 - Stonehaven Dr/E of Site Ent

Case	49					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	1,293				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	53.40	51.64	45.58	54.81	Auto	53.38	51.62	45.56	54.79
Medium Trucks	46.26	39.89	38.35	47.04	Medium Trucks	46.25	39.89	38.34	47.04
Heavy Trucks	47.59	38.55	39.80	48.28	Heavy Trucks	47.58	38.54	39.79	48.27
	55.03	52.11	47.21	56.24		55.01	52.09	47.19	56.22

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	54.79	47.04	48.27	**56.22**

2020 - Stonehaven Dr/N of Yorba Linda Blvd

							Auto	Med Truck	Hvy Truck
Case	50								
Speed	35					Vehicle Height	0	2.3	8
Distance to Receiver	50					Net Receiver Height	5	2.7	-3
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard								
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09
						Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	2,123					Difference (D)	0.000	0.000	0.000
						Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	55.56	53.79	47.74	56.96	Auto	55.54	53.77	47.71	56.94
Medium Trucks	48.41	42.05	40.50	49.20	Medium Trucks	48.40	42.04	40.50	49.19
Heavy Trucks	49.74	40.70	41.95	50.44	Heavy Trucks	49.73	40.70	41.95	50.43
	57.19	54.27	49.36	58.39		57.17	54.25	49.34	58.38

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	56.94	49.19	50.43	**58.38**

2020+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

							Auto	Med Truck	Hvy Truck
Case	51								
Speed	40					Vehicle Height	0	2.3	8
Distance to Receiver	50					Net Receiver Height	5	2.7	-3
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard								
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09
						Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	31,461					Difference (D)	0.000	0.000	0.000
						Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.97	67.20	61.14	70.37	Auto	68.94	67.18	61.12	70.35
Medium Trucks	61.02	54.66	53.11	61.81	Medium Trucks	61.01	54.65	53.11	61.80
Heavy Trucks	61.95	52.91	54.16	62.64	Heavy Trucks	61.94	52.90	54.15	62.64
	70.30	67.58	62.47	71.54		70.28	67.56	62.45	71.52

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.35	61.80	62.64	**71.52**

2020+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	52						Auto	Med Truck	Hvy Truck	
Speed	40					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,520					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						

50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.83	67.07	61.01	70.24		Auto	68.81	67.05	60.99	70.22
Medium Trucks	60.89	54.52	52.98	61.67		Medium Trucks	60.88	54.52	52.97	61.67
Heavy Trucks	61.82	52.78	54.03	62.51		Heavy Trucks	61.81	52.77	54.02	62.50
	70.17	67.45	62.34	71.41			70.15	67.43	62.32	71.39

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.22	61.67	62.50	**71.39**

2020+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	53						Auto	Med Truck	Hvy Truck	
Speed	40					Vehicle Height	0	2.3	8	
Distance to Receiver	50					Net Receiver Height	5	2.7	-3	
Distance to Wall	25					Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0					Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5					Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard									
Height of Wall	0					Direct Distance (CD)	50.25	50.07	50.09	
						Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	29,415					Difference (D)	0.000	0.000	0.000	
						Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily		Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%						
Med	84.8%	4.9%	10.3%	1.8%						
Heavy	86.5%	2.7%	10.8%	0.7%						

50 ft Reference SPL	Day	Evening	Night	CNEL		**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.67	66.91	60.85	70.08		Auto	68.65	66.89	60.83	70.06
Medium Trucks	60.73	54.36	52.82	61.51		Medium Trucks	60.72	54.36	52.81	61.51
Heavy Trucks	61.66	52.62	53.87	62.35		Heavy Trucks	61.65	52.61	53.86	62.34
	70.01	67.29	62.18	71.25			69.99	67.27	62.16	71.23

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.06	61.51	62.34	**71.23**

2020+Project - Weir Canyon/E of La Palma

Case	54					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	47,034				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.21	70.45	64.39	73.62	Auto	72.19	70.42	64.37	73.60
Medium Trucks	63.56	57.20	55.66	64.35	Medium Trucks	63.56	57.20	55.65	64.35
Heavy Trucks	64.19	55.16	56.41	64.89	Heavy Trucks	64.19	55.15	56.40	64.88
	73.33	70.77	65.51	74.60		73.31	70.75	65.49	74.58

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.60	64.35	64.88	**74.58**

2020+Project - Via Del Agua/W of Site Ent

Case	57					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	2,915				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	56.93	55.17	49.11	58.34	Auto	56.91	55.15	49.09	58.32
Medium Trucks	49.79	43.43	41.88	50.57	Medium Trucks	49.78	43.42	41.87	50.57
Heavy Trucks	51.12	42.08	43.33	51.81	Heavy Trucks	51.11	42.07	43.32	51.80
	58.56	55.64	50.74	59.77		58.55	55.62	50.72	59.75

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.32	50.57	51.80	**59.75**

2020+Project - Via Del Agua/N of Yorba Linda Blvd

Case	58					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	4,452				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	58.77	57.01	50.95	60.18	Auto	58.75	56.99	50.93	60.16
Medium Trucks	51.63	45.26	43.72	52.41	Medium Trucks	51.62	45.26	43.71	52.41
Heavy Trucks	52.96	43.92	45.17	53.65	Heavy Trucks	52.95	43.91	45.16	53.64
	60.40	57.48	52.58	61.61		60.38	57.46	52.56	61.59

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	60.16	52.41	53.64	**61.59**

2020+Project - Stonehaven Dr/E of Site Ent

Case	59					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	2,559				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	56.37	54.60	48.55	57.78	Auto	56.35	54.58	48.53	57.75
Medium Trucks	49.22	42.86	41.31	50.01	Medium Trucks	49.21	42.85	41.31	50.00
Heavy Trucks	50.55	41.52	42.76	51.25	Heavy Trucks	50.54	41.51	42.76	51.24
	58.00	55.08	50.17	59.20		57.98	55.06	50.15	59.19

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	57.75	50.00	51.24	**59.19**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020+Project - Stonehaven Dr/N of Yorba Linda Blvd

Case	60					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	3,389				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.59	55.82	49.77	59.00	Auto	57.57	55.80	49.75	58.97
Medium Trucks	50.44	44.08	42.53	51.23	Medium Trucks	50.43	44.07	42.53	51.22
Heavy Trucks	51.77	42.74	43.98	52.47	Heavy Trucks	51.76	42.73	43.98	52.46
	59.22	56.30	51.39	60.42		59.20	56.28	51.37	60.41

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.97	51.22	52.46	**60.41**

2020+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	61					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	31,461				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.97	67.20	61.14	70.37	Auto	68.94	67.18	61.12	70.35
Medium Trucks	61.02	54.66	53.11	61.81	Medium Trucks	61.01	54.65	53.11	61.80
Heavy Trucks	61.95	52.91	54.16	62.64	Heavy Trucks	61.94	52.90	54.15	62.64
	70.30	67.58	62.47	71.54		70.28	67.56	62.45	71.52

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.35	61.80	62.64	**71.52**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	62					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,520				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.83	67.07	61.01	70.24	Auto	68.81	67.05	60.99	70.22
Medium Trucks	60.89	54.52	52.98	61.67	Medium Trucks	60.88	54.52	52.97	61.67
Heavy Trucks	61.82	52.78	54.03	62.51	Heavy Trucks	61.81	52.77	54.02	62.50
	70.17	67.45	62.34	71.41		70.15	67.43	62.32	71.39

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.22	61.67	62.50	**71.39**

2020+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	63					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,680				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.86	67.09	61.04	70.26	Auto	68.83	67.07	61.01	70.24
Medium Trucks	60.91	54.55	53.00	61.70	Medium Trucks	60.90	54.54	53.00	61.69
Heavy Trucks	61.84	52.80	54.05	62.53	Heavy Trucks	61.83	52.80	54.04	62.53
	70.19	67.48	62.36	71.43		70.17	67.46	62.35	71.41

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.24	61.69	62.53	**71.41**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020+Project - Weir Canyon/E of La Palma

Case	64					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	47,034				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.21	70.45	64.39	73.62	Auto	72.19	70.42	64.37	73.60
Medium Trucks	63.56	57.20	55.66	64.35	Medium Trucks	63.56	57.20	55.65	64.35
Heavy Trucks	64.19	55.16	56.41	64.89	Heavy Trucks	64.19	55.15	56.40	64.88
	73.33	70.77	65.51	74.60		73.31	70.75	65.49	74.58

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.60	64.35	64.88	**74.58**

2020+Project - San Antonio Rd/N of Yorba Linda Blvd

Case	65					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	7,629				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	56.91	55.15	49.09	58.32	Auto	56.89	55.12	49.07	58.30
Medium Trucks	51.67	45.30	43.76	52.45	Medium Trucks	51.66	45.30	43.75	52.45
Heavy Trucks	55.50	46.46	47.71	56.19	Heavy Trucks	55.49	46.45	47.70	56.18
	59.97	56.08	52.15	61.04		59.95	56.06	52.13	61.03

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.30	52.45	56.18	**61.03**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020+Project - Aspen Way/E of San Antonio

Case	66			
Speed	25			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	3,955			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	54.06	52.29	46.24	55.47
Medium Trucks	48.81	42.45	40.91	49.60
Heavy Trucks	52.64	43.61	44.86	53.34
	57.11	53.22	49.29	58.19

Attenuated SPL	Day	Evening	Night	CNEL
Auto	54.04	52.27	46.22	55.44
Medium Trucks	48.81	42.44	40.90	49.59
Heavy Trucks	52.63	43.60	44.85	53.33
	57.10	53.20	49.28	58.17

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	55.44	49.59	53.33	**58.17**

2020+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	71			
Speed	40			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	31,461			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	68.97	67.20	61.14	70.37
Medium Trucks	61.02	54.66	53.11	61.81
Heavy Trucks	61.95	52.91	54.16	62.64
	70.30	67.58	62.47	71.54

Attenuated SPL	Day	Evening	Night	CNEL
Auto	68.94	67.18	61.12	70.35
Medium Trucks	61.01	54.65	53.11	61.80
Heavy Trucks	61.94	52.90	54.15	62.64
	70.28	67.56	62.45	71.52

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.35	61.80	62.64	**71.52**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	72					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,520				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.83	67.07	61.01	70.24	Auto	68.81	67.05	60.99	70.22
Medium Trucks	60.89	54.52	52.98	61.67	Medium Trucks	60.88	54.52	52.97	61.67
Heavy Trucks	61.82	52.78	54.03	62.51	Heavy Trucks	61.81	52.77	54.02	62.50
	70.17	67.45	62.34	71.41		70.15	67.43	62.32	71.39

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.22	61.67	62.50	**71.39**

2020+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	73					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,680				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.86	67.09	61.04	70.26	Auto	68.83	67.07	61.01	70.24
Medium Trucks	60.91	54.55	53.00	61.70	Medium Trucks	60.90	54.54	53.00	61.69
Heavy Trucks	61.84	52.80	54.05	62.53	Heavy Trucks	61.83	52.80	54.04	62.53
	70.19	67.48	62.36	71.43		70.17	67.46	62.35	71.41

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.24	61.69	62.53	**71.41**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2020+Project - Weir Canyon/E of La Palma

Case	74			
Speed	45			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	47,034			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	72.21	70.45	64.39	73.62
Medium Trucks	63.56	57.20	55.66	64.35
Heavy Trucks	64.19	55.16	56.41	64.89
	73.33	70.77	65.51	74.60

Attenuated SPL	Day	Evening	Night	CNEL
Auto	72.19	70.42	64.37	73.60
Medium Trucks	63.56	57.20	55.65	64.35
Heavy Trucks	64.19	55.15	56.40	64.88
	73.31	70.75	65.49	74.58

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.60	64.35	64.88	**74.58**

2020+Project - San Antonio Rd/N of Yorba Linda Blvd

Case	75			
Speed	25			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	7,629			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	56.91	55.15	49.09	58.32
Medium Trucks	51.67	45.30	43.76	52.45
Heavy Trucks	55.50	46.46	47.71	56.19
	59.97	56.08	52.15	61.04

Attenuated SPL	Day	Evening	Night	CNEL
Auto	56.89	55.12	49.07	58.30
Medium Trucks	51.66	45.30	43.75	52.45
Heavy Trucks	55.49	46.45	47.70	56.18
	59.95	56.06	52.13	61.03

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.30	52.45	56.18	**61.03**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035 - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	81					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	36,741				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.64	67.87	61.82	71.05	Auto	69.62	67.85	61.80	71.02
Medium Trucks	61.69	55.33	53.79	62.48	Medium Trucks	61.69	55.32	53.78	62.47
Heavy Trucks	62.62	53.59	54.84	63.32	Heavy Trucks	62.61	53.58	54.83	63.31
	70.97	68.26	63.15	72.21		70.95	68.24	63.13	72.19

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	71.02	62.47	63.31	**72.19**

2035 - Yorba Linda Blvd/Village Center-San Antonio

Case	82					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	28,639				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.56	66.79	60.74	69.96	Auto	68.54	66.77	60.71	69.94
Medium Trucks	60.61	54.25	52.70	61.40	Medium Trucks	60.60	54.24	52.70	61.39
Heavy Trucks	61.54	52.50	53.75	62.24	Heavy Trucks	61.53	52.50	53.75	62.23
	69.89	67.18	62.06	71.13		69.87	67.16	62.05	71.11

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	69.94	61.39	62.23	**71.11**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035 - Yorba Linda Blvd/San Antonio-La Palma

Case	83					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	33,376				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.22	67.46	61.40	70.63	Auto	69.20	67.43	61.38	70.61
Medium Trucks	61.27	54.91	53.37	62.06	Medium Trucks	61.27	54.91	53.36	62.06
Heavy Trucks	62.21	53.17	54.42	62.90	Heavy Trucks	62.20	53.16	54.41	62.89
	70.55	67.84	62.73	71.79		70.54	67.82	62.71	71.78

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.61	62.06	62.89	**71.78**

2035 - Weir Canyon/E of La Palma

Case	84					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	50,556				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.53	70.76	64.70	73.93	Auto	72.50	70.74	64.68	73.91
Medium Trucks	63.88	57.52	55.97	64.67	Medium Trucks	63.87	57.51	55.97	64.66
Heavy Trucks	64.51	55.47	56.72	65.20	Heavy Trucks	64.50	55.46	56.71	65.20
	73.65	71.08	65.82	74.91		73.63	71.06	65.80	74.89

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	73.91	64.66	65.20	**74.89**

2035 - San Antonio Rd/N of Yorba Linda Blvd

Case	85					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	3,070				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	52.96	51.19	45.14	54.37	Auto	52.94	51.17	45.12	54.34
Medium Trucks	47.71	41.35	39.81	48.50	Medium Trucks	47.71	41.34	39.80	48.49
Heavy Trucks	51.54	42.51	43.76	52.24	Heavy Trucks	51.53	42.50	43.75	52.23
	56.01	52.12	48.19	57.09		56.00	52.10	48.18	57.07

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	54.34	48.49	52.23	**57.07**

2035 - Aspen Way/E of San Antonio

Case	86					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	621				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	46.02	44.25	38.20	47.43	Auto	46.00	44.23	38.18	47.40
Medium Trucks	40.77	34.41	32.87	41.56	Medium Trucks	40.76	34.40	32.86	41.55
Heavy Trucks	44.60	35.57	36.82	45.30	Heavy Trucks	44.59	35.56	36.81	45.29
	49.07	45.18	41.25	50.15		49.06	45.16	41.24	50.13

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	47.40	41.55	45.29	**50.13**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035 - Via Del Agua/W of Site Ent

Case	87					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	1,100				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	52.70	50.94	44.88	54.11	Auto	52.68	50.91	44.86	54.09
Medium Trucks	45.55	39.19	37.65	46.34	Medium Trucks	45.55	39.19	37.64	46.33
Heavy Trucks	46.88	37.85	39.10	47.58	Heavy Trucks	46.88	37.84	39.09	47.57
	54.33	51.41	46.50	55.54		54.31	51.39	46.49	55.52

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	54.09	46.33	47.57	**55.52**

2035 - Via Del Agua/N of Yorba Linda Blvd

Case	88					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	3,100				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.20	55.43	49.38	58.61	Auto	57.18	55.41	49.36	58.59
Medium Trucks	50.05	43.69	42.15	50.84	Medium Trucks	50.05	43.69	42.14	50.83
Heavy Trucks	51.38	42.35	43.60	52.08	Heavy Trucks	51.38	42.34	43.59	52.07
	58.83	55.91	51.00	60.04		58.81	55.89	50.99	60.02

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.59	50.83	52.07	**60.02**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035 - Stonehaven Dr/E of Site Ent

Case	89					Auto	Med Truck	Hvy Truck
Speed	35				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	2,215				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	55.74	53.97	47.92	57.15	Auto	55.72	53.95	47.90	57.13
Medium Trucks	48.59	42.23	40.69	49.38	Medium Trucks	48.59	42.23	40.68	49.37
Heavy Trucks	49.92	40.89	42.14	50.62	Heavy Trucks	49.92	40.88	42.13	50.61
	57.37	54.45	49.54	58.58		57.35	54.43	49.53	58.56

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	57.13	49.37	50.61	**58.56**

2035 - Stonehaven Dr/N of Yorba Linda Blvd

Case	90					Auto	Med Truck	Hvy Truck
Speed	35				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	3,637				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.90	56.13	50.07	59.30	Auto	57.87	56.11	50.05	59.28
Medium Trucks	50.75	44.39	42.84	51.53	Medium Trucks	50.74	44.38	42.84	51.53
Heavy Trucks	52.08	43.04	44.29	52.77	Heavy Trucks	52.07	43.03	44.28	52.77
	59.52	56.61	51.70	60.73		59.51	56.59	51.68	60.71

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	59.28	51.53	52.77	**60.71**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	91			
Speed	40			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	37,609			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	69.74	67.97	61.92	71.15
Medium Trucks	61.79	55.43	53.89	62.58
Heavy Trucks	62.72	53.69	54.94	63.42
	71.07	68.36	63.25	72.31

Attenuated SPL	Day	Evening	Night	CNEL
Auto	69.72	67.95	61.90	71.13
Medium Trucks	61.79	55.43	53.88	62.57
Heavy Trucks	62.72	53.68	54.93	63.41
	71.06	68.34	63.23	72.29

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	71.13	62.57	63.41	**72.29**

2035+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	92			
Speed	40			
Distance to Receiver	50			
Distance to Wall	25			
Elevation Change	0			
Height of Receiver	5			
Hard or Soft Site	Hard			
Height of Wall	0			
Total Vehicle Volume	30,520			
Percentages	Day	Evening	Night	Daily
Auto	77.5%	12.9%	9.6%	97.4%
Med	84.8%	4.9%	10.3%	1.8%
Heavy	86.5%	2.7%	10.8%	0.7%

	Auto	Med Truck	Hvy Truck
Vehicle Height	0	2.3	8
Net Receiver Height	5	2.7	-3
Net Wall Height	0.00	-2.30	-8.00
Direct LOS Height	2.50	1.35	-1.50
Effective Wall Height	2.50	1.35	-1.50
Direct Distance (CD)	50.25	50.07	50.09
Indirect Distance (CI)	50.25	50.07	50.09
Difference (D)	0.000	0.000	0.000
Fresnel Adjusted	0.000	0.000	0.000
Reduction (NLR)	0.00	0.00	0.00

50 ft Reference SPL	Day	Evening	Night	CNEL
Auto	68.83	67.07	61.01	70.24
Medium Trucks	60.89	54.52	52.98	61.67
Heavy Trucks	61.82	52.78	54.03	62.51
	70.17	67.45	62.34	71.41

Attenuated SPL	Day	Evening	Night	CNEL
Auto	68.81	67.05	60.99	70.22
Medium Trucks	60.88	54.52	52.97	61.67
Heavy Trucks	61.81	52.77	54.02	62.50
	70.15	67.43	62.32	71.39

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.22	61.67	62.50	**71.39**

Giroux and Associates
Analyst: Sara Gerrick
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2035+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	93					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	33,449				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.23	67.46	61.41	70.64	Auto	69.21	67.44	61.39	70.62
Medium Trucks	61.28	54.92	53.38	62.07	Medium Trucks	61.28	54.92	53.37	62.06
Heavy Trucks	62.21	53.18	54.43	62.91	Heavy Trucks	62.21	53.17	54.42	62.90
	70.56	67.85	62.74	71.80		70.55	67.83	62.72	71.79

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.62	62.06	62.90	**71.79**

2035+Project - Weir Canyon/E of La Palma

Case	94					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	51,750				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.63	70.86	64.81	74.03	Auto	72.61	70.84	64.78	74.01
Medium Trucks	63.98	57.62	56.07	64.77	Medium Trucks	63.97	57.61	56.07	64.76
Heavy Trucks	64.61	55.57	56.82	65.31	Heavy Trucks	64.60	55.57	56.82	65.30
	73.75	71.18	65.92	75.01		73.73	71.16	65.90	74.99

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	74.01	64.76	65.30	**74.99**

2035+Project - Via Del Agua/W of Site Ent

Case	97					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	3,451				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.67	55.90	49.85	59.07	Auto	57.65	55.88	49.82	59.05
Medium Trucks	50.52	44.16	42.61	51.31	Medium Trucks	50.51	44.15	42.61	51.30
Heavy Trucks	51.85	42.81	44.06	52.55	Heavy Trucks	51.84	42.81	44.06	52.54
	59.30	56.38	51.47	60.50		59.28	56.36	51.45	60.49

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	59.05	51.30	52.54	**60.49**

2035+Project - Via Del Agua/N of Yorba Linda Blvd

Case	98					Auto	Med Truck	Hvy Truck	
Speed	35				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	5,451				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	59.65	57.89	51.83	61.06	Auto	59.63	57.86	51.81	61.04
Medium Trucks	52.51	46.14	44.60	53.29	Medium Trucks	52.50	46.14	44.59	53.29
Heavy Trucks	53.84	44.80	46.05	54.53	Heavy Trucks	53.83	44.79	46.04	54.52
	61.28	58.36	53.45	62.49		61.26	58.34	53.44	62.47

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	61.04	53.29	54.52	**62.47**

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Analyst: Sara Gerrick
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2035+Project - Stonehaven Dr/E of Site Ent

Case	99					Auto	Med Truck	Hvy Truck
Speed	35				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	3,481				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.70	55.94	49.88	59.11	Auto	57.68	55.92	49.86	59.09
Medium Trucks	50.56	44.20	42.65	51.34	Medium Trucks	50.55	44.19	42.64	51.34
Heavy Trucks	51.89	42.85	44.10	52.58	Heavy Trucks	51.88	42.84	44.09	52.58
	59.33	56.42	51.51	60.54		59.32	56.40	51.49	60.52

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	59.09	51.34	52.58	**60.52**

2035+Project - Stonehaven Dr/N of Yorba Linda Blvd

Case	100					Auto	Med Truck	Hvy Truck
Speed	35				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	4,903				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	59.19	57.43	51.37	60.60	Auto	59.17	57.40	51.35	60.58
Medium Trucks	52.04	45.68	44.14	52.83	Medium Trucks	52.04	45.68	44.13	52.83
Heavy Trucks	53.38	44.34	45.59	54.07	Heavy Trucks	53.37	44.33	45.58	54.06
	60.82	57.90	52.99	62.03		60.80	57.88	52.98	62.01

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	60.58	52.83	54.06	**62.01**

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Analyst: Sara Gerrick
4/22/2014

2035+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	101					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	37,609				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.74	67.97	61.92	71.15	Auto	69.72	67.95	61.90	71.13
Medium Trucks	61.79	55.43	53.89	62.58	Medium Trucks	61.79	55.43	53.88	62.57
Heavy Trucks	62.72	53.69	54.94	63.42	Heavy Trucks	62.72	53.68	54.93	63.41
	71.07	68.36	63.25	72.31		71.06	68.34	63.23	72.29

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	71.13	62.57	63.41	**72.29**

2035+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	102					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,520				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.83	67.07	61.01	70.24	Auto	68.81	67.05	60.99	70.22
Medium Trucks	60.89	54.52	52.98	61.67	Medium Trucks	60.88	54.52	52.97	61.67
Heavy Trucks	61.82	52.78	54.03	62.51	Heavy Trucks	61.81	52.77	54.02	62.50
	70.17	67.45	62.34	71.41		70.15	67.43	62.32	71.39

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.22	61.67	62.50	**71.39**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	103					Auto	Med Truck	Hvy Truck
Speed	40				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	34,714				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.39	67.63	61.57	70.80	Auto	69.37	67.60	61.55	70.78
Medium Trucks	61.45	55.08	53.54	62.23	Medium Trucks	61.44	55.08	53.53	62.23
Heavy Trucks	62.38	53.34	54.59	63.07	Heavy Trucks	62.37	53.33	54.58	63.06
	70.73	68.01	62.90	71.96		70.71	67.99	62.88	71.95

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.78	62.23	63.06	**71.95**

2035+Project - Weir Canyon/E of La Palma

Case	104					Auto	Med Truck	Hvy Truck
Speed	45				Vehicle Height	0	2.3	8
Distance to Receiver	50				Net Receiver Height	5	2.7	-3
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50
Hard or Soft Site	Hard							
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09
					Indirect Distance (CI)	50.25	50.07	50.09
Total Vehicle Volume	51,750				Difference (D)	0.000	0.000	0.000
					Fresnel Adjusted	0.000	0.000	0.000
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00
Auto	77.5%	12.9%	9.6%	97.4%				
Med	84.8%	4.9%	10.3%	1.8%				
Heavy	86.5%	2.7%	10.8%	0.7%				

50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.63	70.86	64.81	74.03	Auto	72.61	70.84	64.78	74.01
Medium Trucks	63.98	57.62	56.07	64.77	Medium Trucks	63.97	57.61	56.07	64.76
Heavy Trucks	64.61	55.57	56.82	65.31	Heavy Trucks	64.60	55.57	56.82	65.30
	73.75	71.18	65.92	75.01		73.73	71.16	65.90	74.99

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	74.01	64.76	65.30	**74.99**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035+Project - San Antonio Rd/N of Yorba Linda Blvd

Case	105					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	8,838				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.55	55.78	49.73	58.96	Auto	57.53	55.76	49.71	58.94
Medium Trucks	52.30	45.94	44.40	53.09	Medium Trucks	52.30	45.94	44.39	53.08
Heavy Trucks	56.13	47.10	48.35	56.83	Heavy Trucks	56.13	47.09	48.34	56.82
	60.61	56.72	52.78	61.68		60.59	56.70	52.77	61.67

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.94	53.08	56.82	**61.67**

2035+Project - Aspen Way/E of San Antonio

Case	106					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	4,238				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	54.36	52.59	46.54	55.77	Auto	54.34	52.57	46.52	55.74
Medium Trucks	49.11	42.75	41.21	49.90	Medium Trucks	49.11	42.74	41.20	49.89
Heavy Trucks	52.94	43.91	45.16	53.64	Heavy Trucks	52.93	43.90	45.15	53.63
	57.41	53.52	49.59	58.49		57.40	53.50	49.58	58.47

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	55.74	49.89	53.63	**58.47**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035+Project - Yorba Linda Blvd/Imperial Hwy-Kellog Dr

Case	111					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	37,609				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.74	67.97	61.92	71.15	Auto	69.72	67.95	61.90	71.13
Medium Trucks	61.79	55.43	53.89	62.58	Medium Trucks	61.79	55.43	53.88	62.57
Heavy Trucks	62.72	53.69	54.94	63.42	Heavy Trucks	62.72	53.68	54.93	63.41
	71.07	68.36	63.25	72.31		71.06	68.34	63.23	72.29

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	71.13	62.57	63.41	**72.29**

2035+Project - Yorba Linda Blvd/Village Center-San Antonio

Case	112					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	30,520				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	68.83	67.07	61.01	70.24	Auto	68.81	67.05	60.99	70.22
Medium Trucks	60.89	54.52	52.98	61.67	Medium Trucks	60.88	54.52	52.97	61.67
Heavy Trucks	61.82	52.78	54.03	62.51	Heavy Trucks	61.81	52.77	54.02	62.50
	70.17	67.45	62.34	71.41		70.15	67.43	62.32	71.39

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.22	61.67	62.50	**71.39**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035+Project - Yorba Linda Blvd/San Antonio-La Palma

Case	113					Auto	Med Truck	Hvy Truck	
Speed	40				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	34,714				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	69.39	67.63	61.57	70.80	Auto	69.37	67.60	61.55	70.78
Medium Trucks	61.45	55.08	53.54	62.23	Medium Trucks	61.44	55.08	53.53	62.23
Heavy Trucks	62.38	53.34	54.59	63.07	Heavy Trucks	62.37	53.33	54.58	63.06
	70.73	68.01	62.90	71.96		70.71	67.99	62.88	71.95

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	70.78	62.23	63.06	**71.95**

2035+Project - Weir Canyon/E of La Palma

Case	114					Auto	Med Truck	Hvy Truck	
Speed	45				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	51,750				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	72.63	70.86	64.81	74.03	Auto	72.61	70.84	64.78	74.01
Medium Trucks	63.98	57.62	56.07	64.77	Medium Trucks	63.97	57.61	56.07	64.76
Heavy Trucks	64.61	55.57	56.82	65.31	Heavy Trucks	64.60	55.57	56.82	65.30
	73.75	71.18	65.92	75.01		73.73	71.16	65.90	74.99

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	74.01	64.76	65.30	**74.99**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

2035+Project - San Antonio Rd/N of Yorba Linda Blvd

Case	115					Auto	Med Truck	Hvy Truck	
Speed	25				Vehicle Height	0	2.3	8	
Distance to Receiver	50				Net Receiver Height	5	2.7	-3	
Distance to Wall	25				Net Wall Height	0.00	-2.30	-8.00	
Elevation Change	0				Direct LOS Height	2.50	1.35	-1.50	
Height of Receiver	5				Effective Wall Height	2.50	1.35	-1.50	
Hard or Soft Site	Hard								
Height of Wall	0				Direct Distance (CD)	50.25	50.07	50.09	
					Indirect Distance (CI)	50.25	50.07	50.09	
Total Vehicle Volume	8,838				Difference (D)	0.000	0.000	0.000	
					Fresnel Adjusted	0.000	0.000	0.000	
Percentages	Day	Evening	Night	Daily	Reduction (NLR)	0.00	0.00	0.00	
Auto	77.5%	12.9%	9.6%	97.4%					
Med	84.8%	4.9%	10.3%	1.8%					
Heavy	86.5%	2.7%	10.8%	0.7%					
50 ft Reference SPL	Day	Evening	Night	CNEL	**Attenuated SPL**	Day	Evening	Night	CNEL
Auto	57.55	55.78	49.73	58.96	Auto	57.53	55.76	49.71	58.94
Medium Trucks	52.30	45.94	44.40	53.09	Medium Trucks	52.30	45.94	44.39	53.08
Heavy Trucks	56.13	47.10	48.35	56.83	Heavy Trucks	56.13	47.09	48.34	56.82
	60.61	56.72	52.78	61.68		60.59	56.70	52.77	61.67

Resulting Noise Levels

	Auto	Medium Truck	Heavy Truck	24-hour CNEL
Total Attenuated Noise	58.94	53.08	56.82	**61.67**

Giroux and Associates
Analyst: Sara Gerrick
4/22/2014

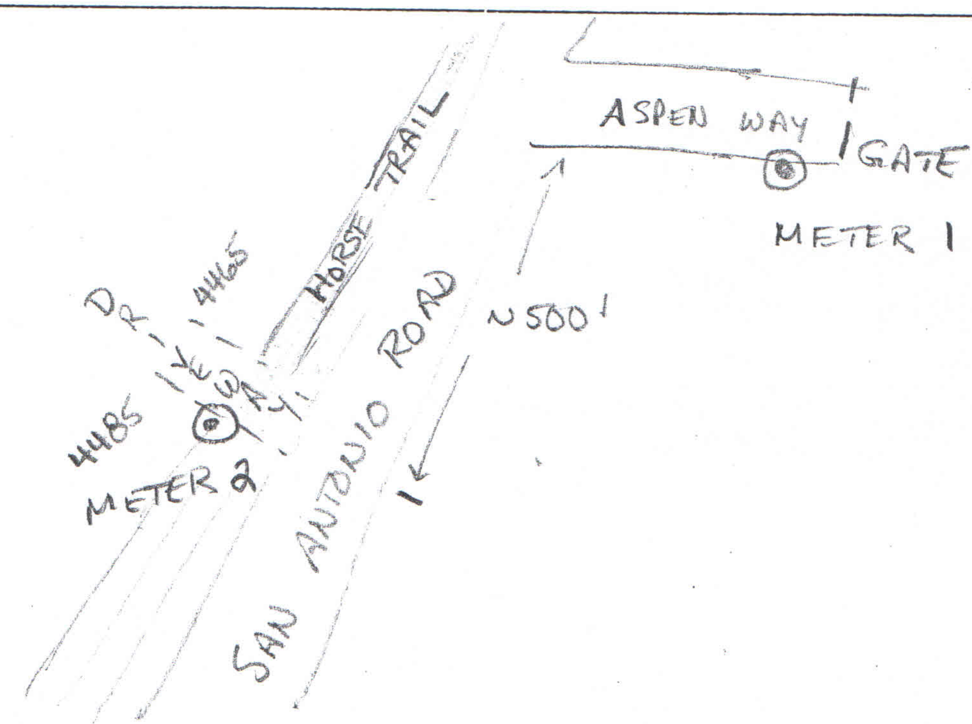
NOISE MEASUREMENT FORM

PROJECT: Y.L.E.	ENGINEER/TECHNICIAN: DAVE G.	DATE: 11/06/2012
LOCATION: ASPEN WAY + SAN ANTONIO ROAD		SITE NO.: 1, 2

SOUND LEVEL METER: LDL 700 B	CALIBRATOR SIMPSON MODEL 890	NOTES:
SERIAL #: 3203		Weather Clear 65° F Wind SW 3-5MPH

TIME START	TIME FINISH	L_{EQ}	L_{MAX}	L_{MIN}	L_{10}	L_{33}	L_{50}	L_{90}	
2:05pm	2:25pm	46.3	63.0	39.0	45.5	42.0	41.5	40.0	SITE 1
2:35pm	2:55pm	56.6	69.0	39.0	61.5	53.5	47.0	41.0	SITE 2

SKETCH

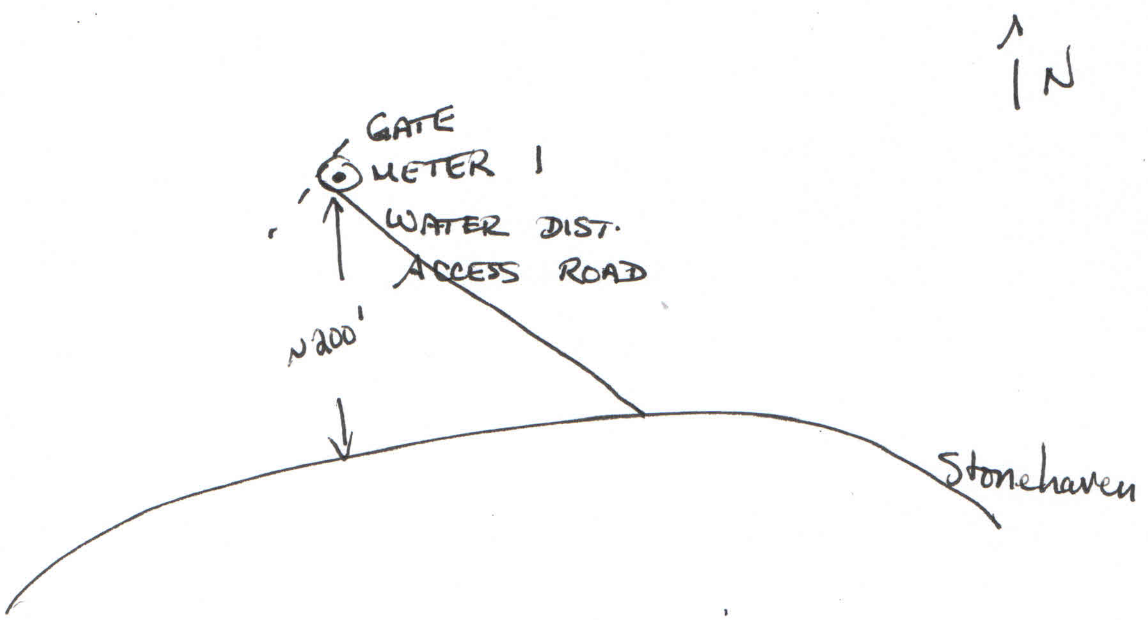


NOISE MEASUREMENT FORM

PROJECT: Y. L. E	ENGINEER/TECHNICIAN: Haus	DATE: 10/21/13
LOCATION: Stonehaven /Water District Road		SITE NO.: 1
SOUND LEVEL METER: TES 1350	CALIBRATION: INTERNAL	NOTES: Light Winds all 3 days
SERIAL #: 96068679		

TIME START	TIME FINISH	L_{EQ}	L_{MAX}	L_{MIN}	L_{10}	L_{33}	L_{50}	L_{90}	
	see attached hourly detail								

SKETCH



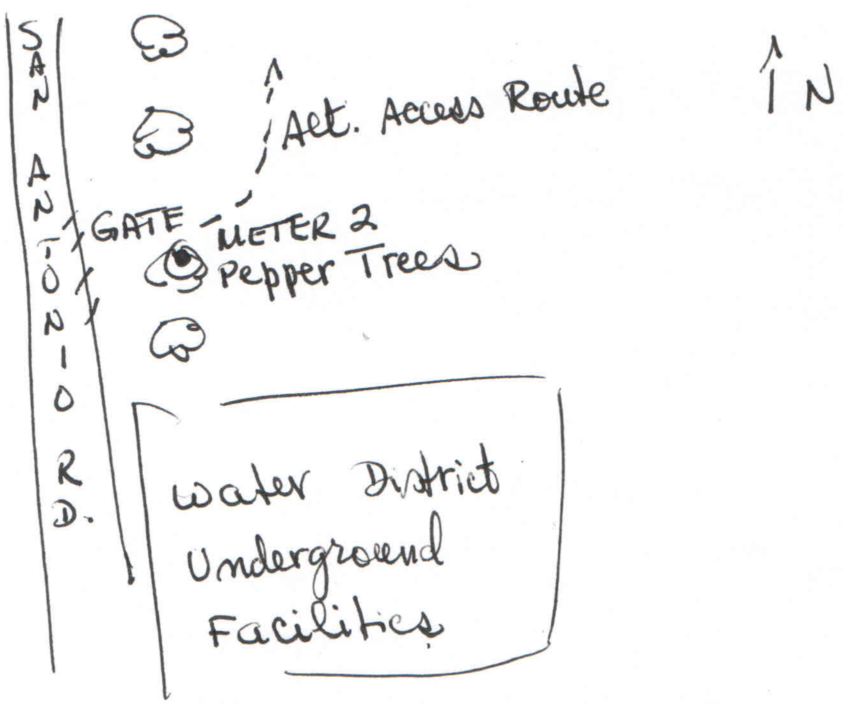
NOISE MEASUREMENT FORM

PROJECT: Y. L. E.	ENGINEER/TECHNICIAN: Haus	DATE: 10/21/13
LOCATION: SAN ANTONIO ROAD ACCESS ALT.		SITE NO.: 2

SOUND LEVEL METER: EXTECH 407736	CALIBRATION: INTERNAL	NOTES: Light winds all 3 days
SERIAL #: G030936		

TIME									
START	FINISH	L_{EQ}	L_{MAX}	L_{MIN}	L_{10}	L_{33}	L_{50}	L_{90}	
see attached hourly detail									

SKETCH



Appendix F –
Updated Fire Evacuation Analysis
Prepared by Linscott Law & Greenspan dated May 9, 2014

LINSCOTT
LAW &
GREENSPAN
engineers

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Transportation
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Pasadena
Irvine
San Diego
Woodland Hills

May 9, 2014

Mr. Douglas Wymore, Esq.
Yorba Linda Estates, LLC
7114 East Stetson Drive, Suite 350
Scottsdale, AZ 85251

LLG Reference: 2.13.3281.1

Subject: ***Updated* Fire Evacuation Analysis for the Proposed Esperanza Hills Development**
County of Orange, California

Dear Mr. Wymore:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Fire Evacuation Analysis for the proposed Esperanza Hills development located in the County of Orange. The proposed Esperanza Hills project site is located on approximately 469 acres of vacant land east of the terminus of Aspen Way and north of Stonehaven Drive in Unincorporated County of Orange. The proposed project consists of up to 378 single-family residential units (340 proposed units for Esperanza Hills and 38 future potential units for Bridal Hills, LLC) with the main access roadway provided via two options; Option 1 via Stonehaven Drive, Option 2 via San Antonio Road at Aspen Way, Option 2A via San Antonio Road approximately 1,850 feet south of Aspen Way, and Option 2B, which consists of providing public access via both San Antonio Road approximately 1,850 feet south of Aspen Way and Stonehaven Drive. ***Figure 1*** presents the existing evacuation routes and number of existing homes in the vicinity of the Project site. ***Figure 2*** presents the existing/proposed evacuation routes and number of existing homes in the vicinity of the Project site combined with the Option 1 Esperanza Hills development scenario. ***Figure 3*** presents the existing/proposed evacuation routes and number of existing homes in the vicinity of the Project site combined with the Option 2 Esperanza Hills development scenario. ***Figure 4*** presents the existing/proposed evacuation routes and number of existing homes in the vicinity of the Project site combined with the Option 2A and 2B Esperanza Hills development scenarios.

This Fire Evacuation Analysis addresses the estimated duration it would take to evacuate the entire Esperanza Hills development for all four access options described above. This analysis also includes the existing residential developments in the vicinity of the Project site that may also need to evacuate during the same incident plus the proposed 112 single-family residential unit Cielo Vista project and eleven (11) potential future homes in the Casino Ridge development. It should be noted that the basis for the evacuation routes are consistent with the Emergency Access Plans (*Figures 11-2: Option 1* & *Figure 17-2: Option 2*) contained in the approved TIA, prepared by LLG (March 18, 2013). The following list summarizes the assumptions used in the analysis:

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- Existing development in the Project vicinity considered in this analysis consists of 771 homes.
- Option 1 fire evacuation path via main Project access to Stonehaven Drive and via secondary emergency access to Via Del Agua (TIA *Figure 11-2*).
- Of the 378 proposed homes, 65% (246 DU) will evacuate via Via Del Agua and 35% (132 DU) via Stonehaven Drive (Option 1).
- Option 2 evacuation path via main Project access to Aspen Way/San Antonio Road and via secondary emergency access to Stonehaven Drive (TIA *Figure 17-2*).
- Of the 378 proposed homes, 65% will evacuate via San Antonio Road, 24% (91 DU) via Via Del Agua, and 11% (41 DU) via Stonehaven Drive (Option 2, 2A, & 2B).
- Based on the ADT on Via Del Agua, San Antonio Road, and Stonehaven Drive, approximately 87 existing homes will evacuate via Via Del Agua, 410 existing homes via San Antonio Road, 56 existing homes will evacuate via Dorinda Road, and 218 existing homes via Stonehaven Drive (not including the proposed Project).
- Each home will evacuate via two vehicles, which assumes every home is occupied at the time of evacuation notice.
- Each resident is directed to depart their home (evacuate) at the same time.
- Lane capacity of 1,600 vehicles per hour per lane (vphpl) with 75% green time at the intersections with Yorba Linda Boulevard [effective capacity of 1,200 vphpl, which is based on 1,600 vphpl x 0.75 (75%)].
- Manned traffic control at the intersections of Via Del Agua, San Antonio Road, Dorinda Road, and Stonehaven Drive with Yorba Linda Boulevard.
- 112 single-family DU's as part of the proposed Cielo Vista Project are assumed in the analysis with 95 DU directed to Stonehaven Drive and 17 DU directed to San Antonio Road via Aspen Way.
- 11 potential future single-family DU's as part of the proposed Casino Ridge development are assumed in the analysis and are directed to San Antonio Road

Figure 5 presents the fire evacuation traffic volumes and estimated evacuation time to clear every vehicle to Yorba Linda Boulevard for existing conditions. As presented in *Figure 5*, based on an effective roadway capacity of 1,200 vphpl on Via Del Agua, San Antonio Road, Dorinda Road, and Stonehaven Drive, all of the approximately 771 homes in the study area could optimally evacuated to Yorba Linda Boulevard within 45 minutes. However, assuming that all residents depart their home within the

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engineers

first 30 minutes, which results in a peak hour factor of 0.50, full evacuation of the study area may practically take up to 90 minutes.

Figure 6 presents the fire evacuation traffic volumes and estimated evacuation time to clear every vehicle to Yorba Linda Boulevard for the proposed Option 1 development access scenario, which directs Project traffic to Via Del Agua and Stonehaven Drive only. As presented in *Figure 6*, based on an effective roadway capacity of 1,200 vphpl on Via Del Agua, San Antonio Road, Dorinda Road, and Stonehaven Drive, all of the approximately 1,272 homes in the study area could optimally evacuated to Yorba Linda Boulevard within 45 minutes. However, assuming that all residents depart their home within the first 30 minutes, which results in a peak hour factor of 0.50, full evacuation of the study area may practically take up to 90 minutes.

Figure 7 presents the fire evacuation traffic volumes and estimated evacuation time to clear every vehicle to Yorba Linda Boulevard for the proposed Option 2, 2A, and 2B development access scenario, which directs Project traffic to San Antonio Road, Via Del Agua, and Stonehaven Drive. As presented in *Figure 7*, based on an effective roadway capacity of 1,200 vphpl on Via Del Agua, San Antonio Road, Dorinda Road, and Stonehaven Drive, all of the approximately 1,272 homes in the study area could optimally be evacuated to Yorba Linda Boulevard within 75 minutes. However, assuming that all residents depart their home within the first 30 minutes, which results in a peak hour factor of 0.50, full evacuation of the study area may practically take up to 2.5 hours via San Antonio Road and up to 60 minutes via Stonehaven Drive.

Conclusion

Based on this Fire Evacuation Analysis for the proposed Esperanza Hills Project, depending on the development access scenario, it should optimally take no longer than 1 hour and practically no longer than 2.5 hours to fully evacuate the approximately 1,272 existing and proposed homes (including Cielo Vista) in the vicinity of the Project site once the alert is given.

We appreciate the opportunity to provide this updated fire evacuation analysis. Should you have any questions, please call me at (949) 825-6175.

Very truly yours,
Linscott, Law & Greenspan, Engineers

REGISTERED PROFESSIONAL ENGINEER
KEIL D. MABERRY, P.E.
No. 1802
Exp. 6.30.15
TRAFFIC
STATE OF CALIFORNIA

Keil D. Maberry, P.E.
Principal

Attachments

N:\3200\2123281 - Yorba Linda Estates, Yorba Linda\Letters & Faxes\Evacuation Analysis\Final Letter\Esperanza Hills Estates Updated Evacuation Analysis Letter, 05-09-14.doc

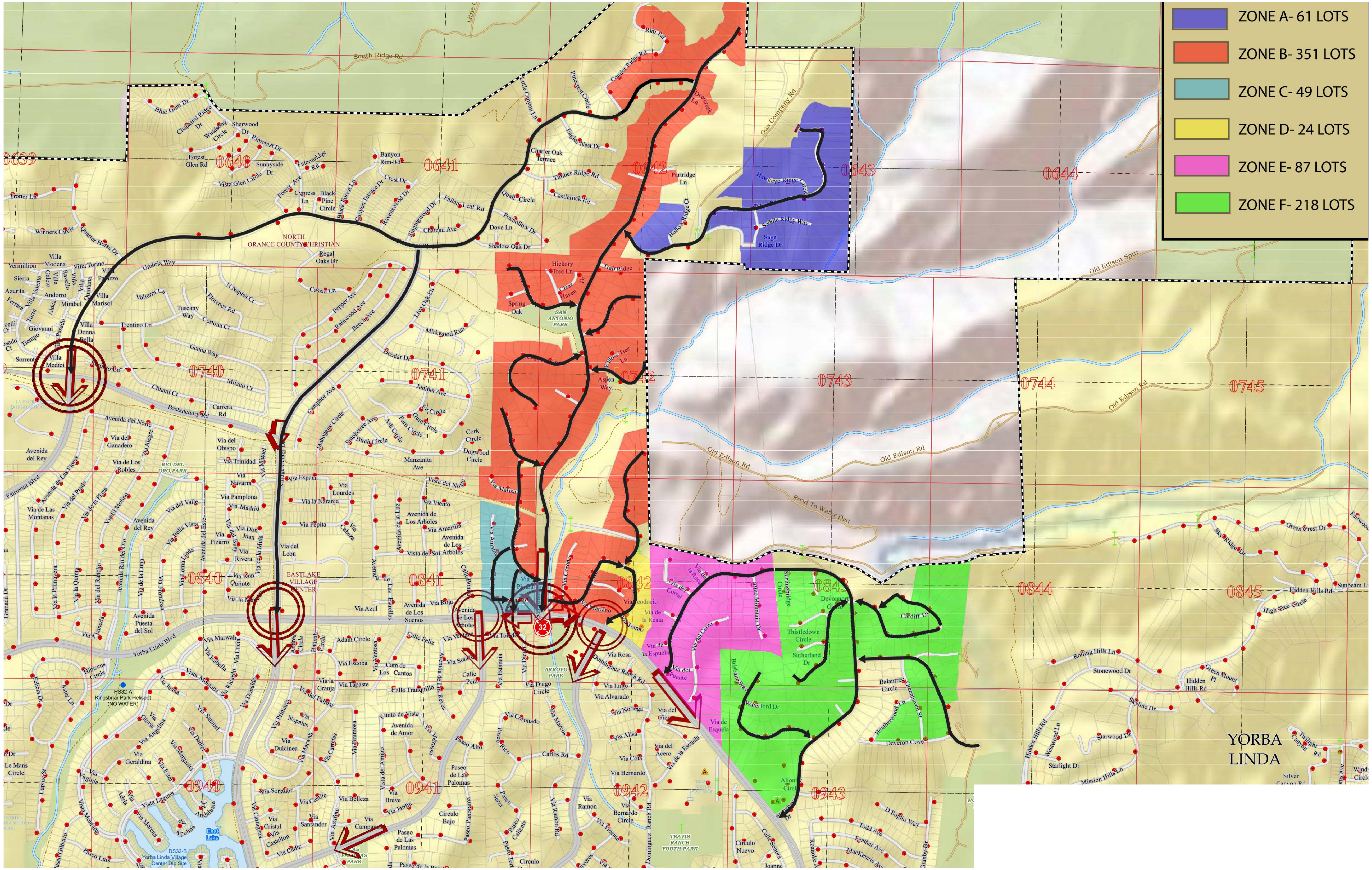

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FIGURE 1

FIRE EVACUATION ROUTES (EXISTING)

ALBERHILL RANCH ELEMENTARY SCHOOL (LEUSD #17), LAKE ELSINORE

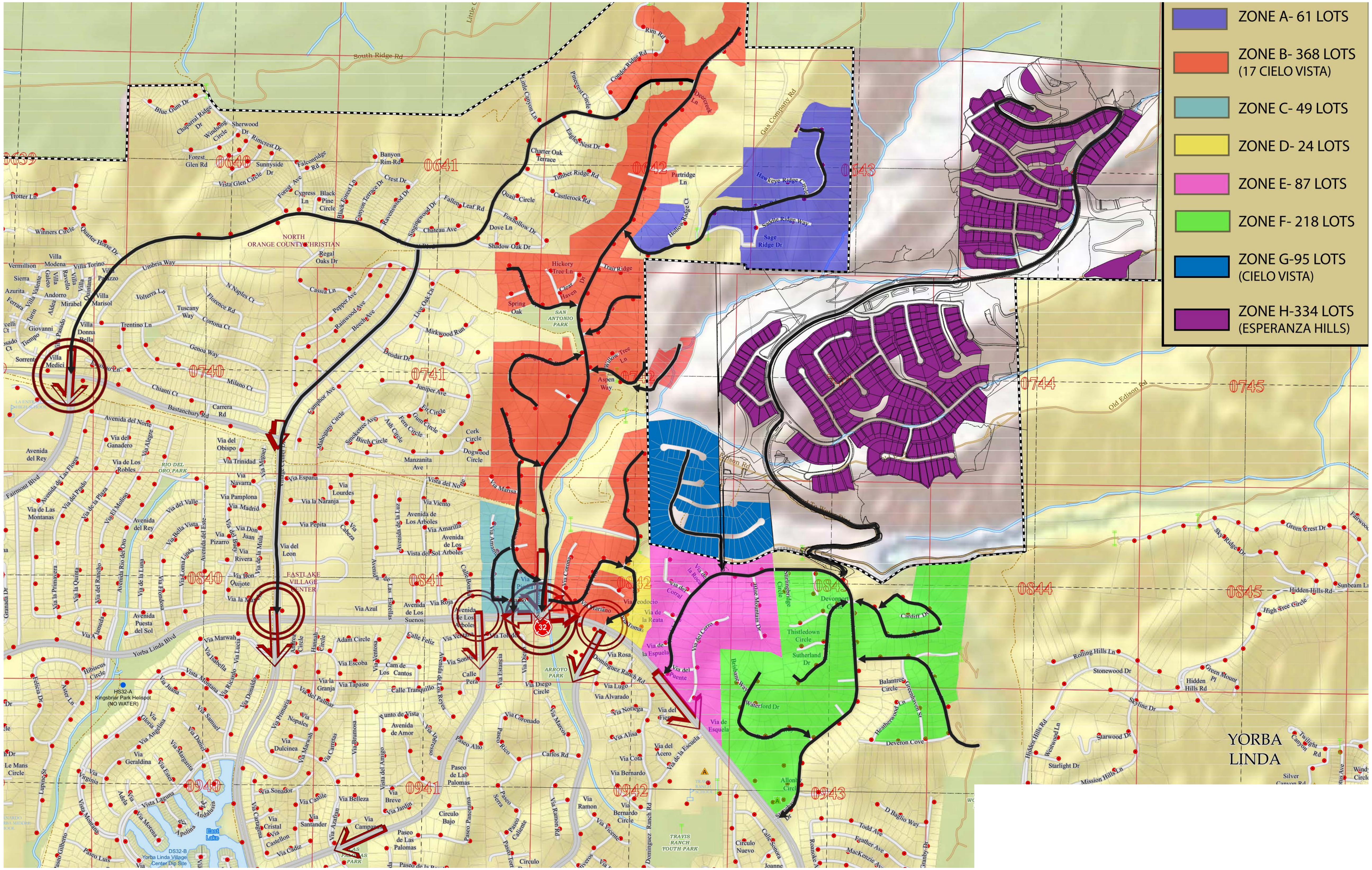

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FIGURE 2

FIRE EVACUATION ROUTES (OPTION 1)

ALBERHILL RANCH ELEMENTARY SCHOOL (LEUSD #17), LAKE ELSINORE

n:\3200\2123281 – yorba linda estates, yorba linda\dwg\fire evacuation figs\yl 5-7-14\3281f-2.dwg LDP 13:55:1 05-07-2014 aguilar

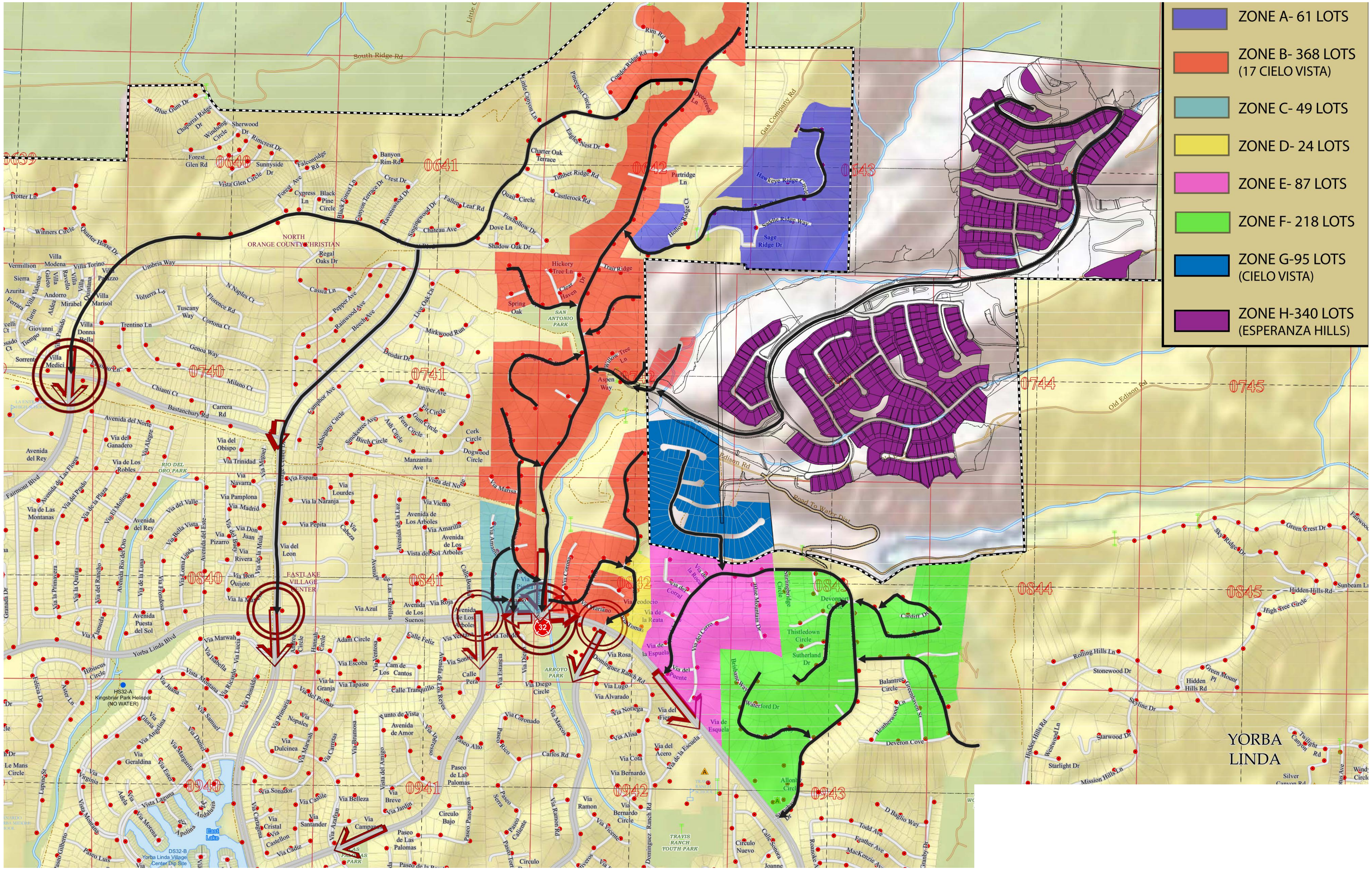

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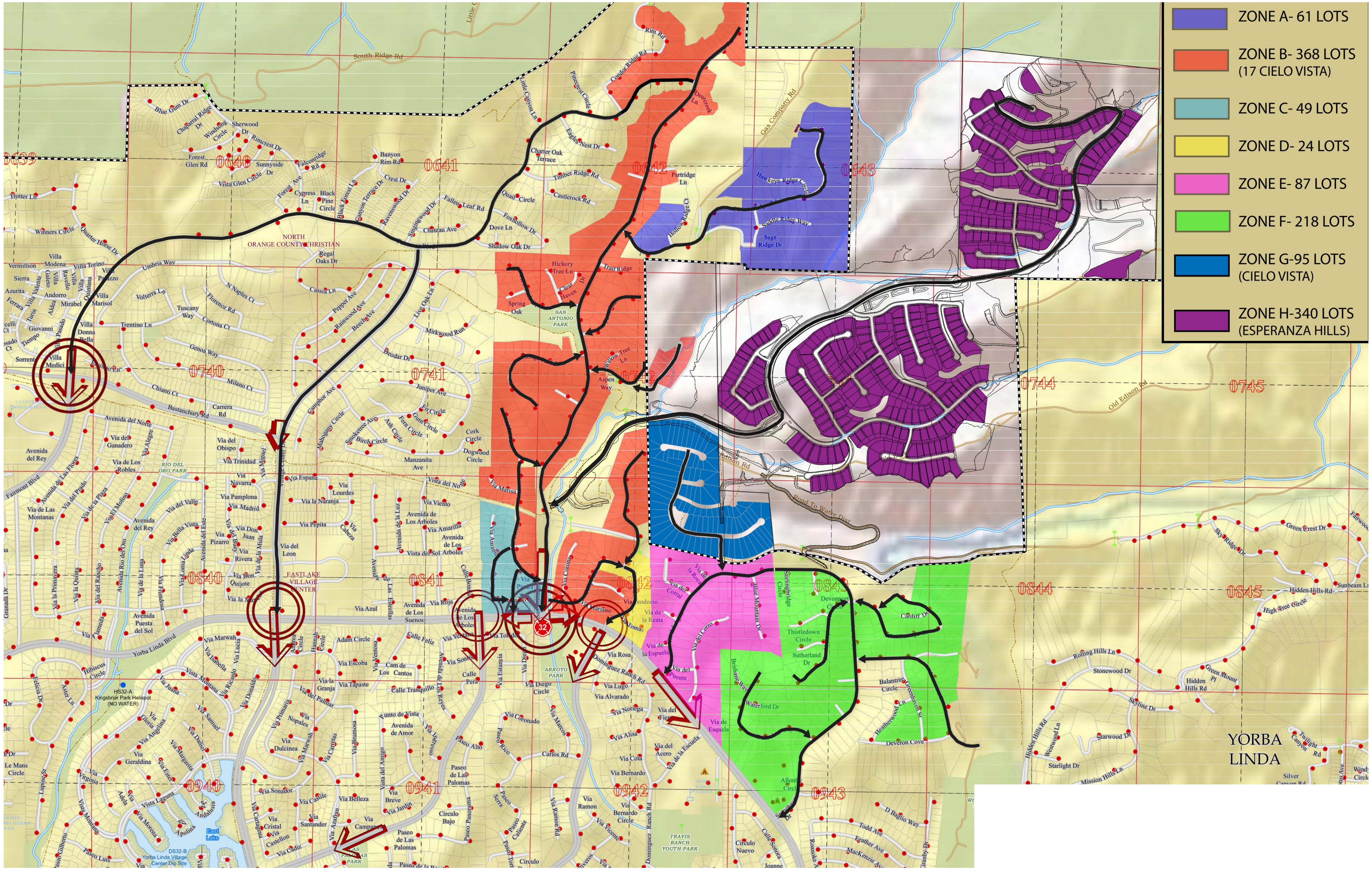
FIGURE 3

FIRE EVACUATION ROUTES (OPTION 2)

ALBERHILL RANCH ELEMENTARY SCHOOL (LEUSD #17), LAKE ELSINORE



n:\3200\2123281 – yorba linda estates, yorba linda\dwg\fire evacuation figs\yl 5-7-14\3281f-4.dwg LDP 14:02:4 05-07-2014 aguilar

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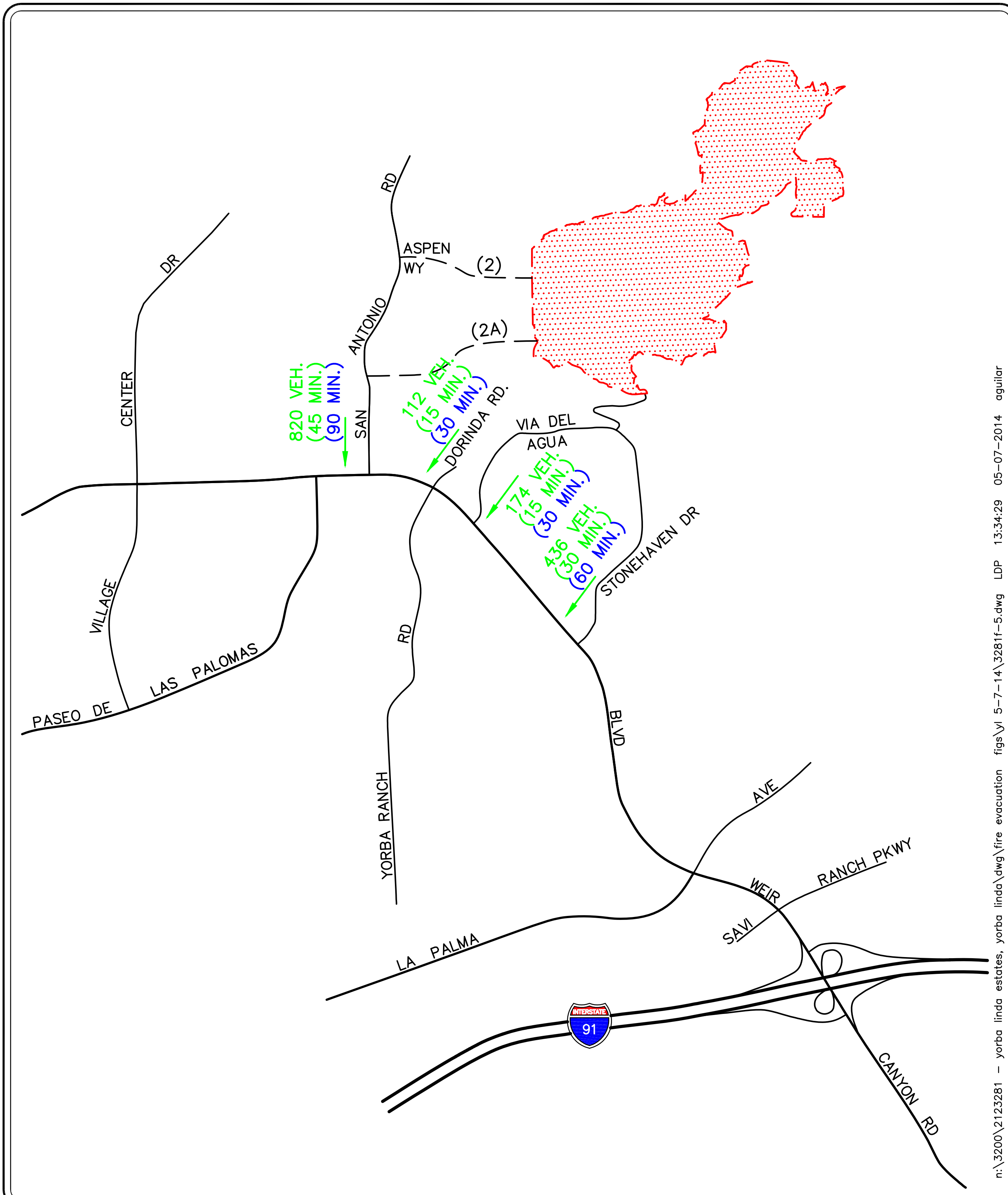
FIGURE 4

FIRE EVACUATION ROUTES (OPTION 2A & 2B)

ALBERHILL RANCH ELEMENTARY SCHOOL (LEUSD #17), LAKE ELSINORE



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NO SCALE

KEY

= PROJECT SITE

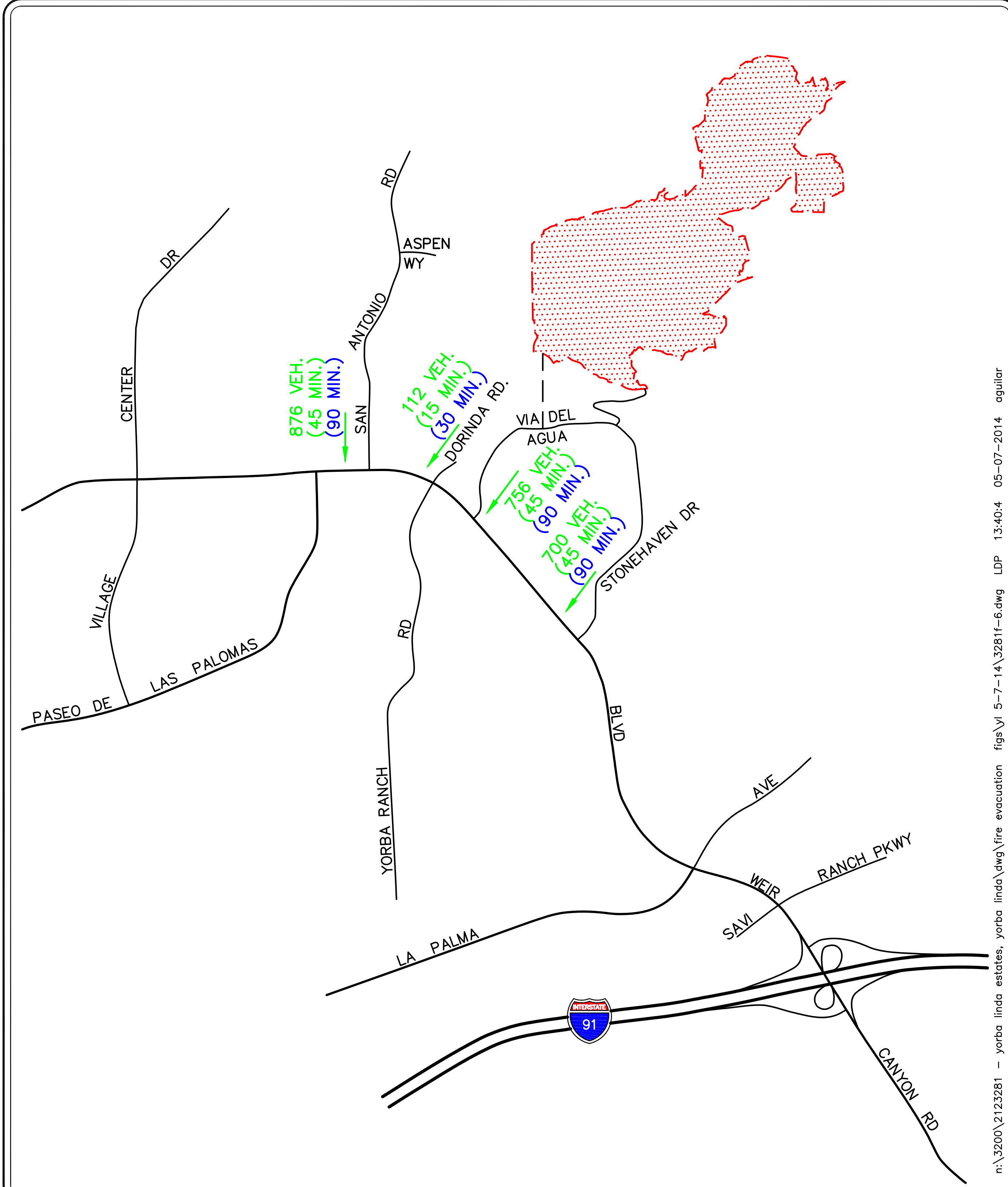
(XX MIN.) = OPTIMAL TIME

(YY MIN.) = PRACTICAL TIME

FIGURE 5

FIRE EVACUATION TRAFFIC VOLUMES (EXISTING CONDITIONS)

ESPARANZA HILLS, YORBA LINDA



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NO SCALE

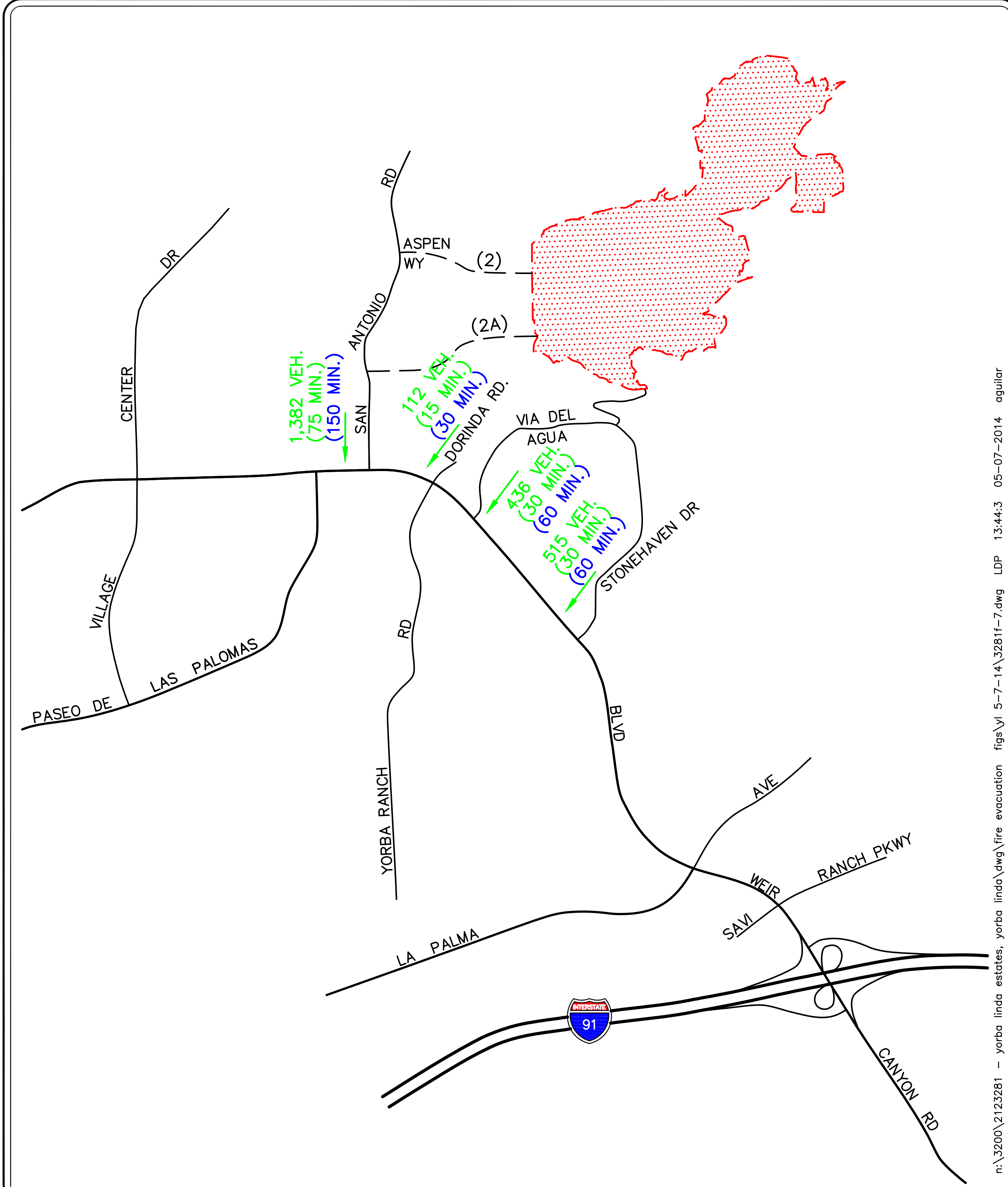
KEY

= PROJECT SITE
(XX MIN.) = OPTIMAL TIME
(YY MIN.) = PRACTICAL TIME

FIGURE 6

FIRE EVACUATION TRAFFIC VOLUMES (OPTION 1)

ESPARANZA HILLS, YORBA LINDA



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NO SCALE

KEY

= PROJECT SITE

(XX MIN.) = OPTIMAL TIME

(YY MIN.) = PRACTICAL TIME

FIGURE 7

FIRE EVACUATION TRAFFIC VOLUMES (OPTION 2, 2A, & 2B)

ESPARANZA HILLS, YORBA LINDA

Transportation Studies, Inc.

2640 Walnut Avenue, Ste H
Tustin, CA. 92780

Location: : SAN ANTONIO ROAD — Site: YORBA LINDA
Segment: : N/O YORBA LINDA BOULEVARD — Date: 02/20/14
Client: : LL&G

Interval Begin	NB AM		NB PM		SB AM		SB PM		Combined AM		Combined PM	
12:00	2	11	21	109	3	8	16	103	5	19	37	212
12:15	1		18		2		24		3		42	
12:30	3		44		1		36		4		80	
12:45	5		26		2		27		7		53	
01:00	1	2	26	99	1	1	16	80	2	3	42	179
01:15	1		23		0		12		1		35	
01:30	0		26		0		27		0		53	
01:45	0		24		0		25		0		49	
02:00	0	0	23	131	0	0	25	120	0	0	48	251
02:15	0		27		0		27		0		54	
02:30	0		22		0		38		0		60	
02:45	0		59		0		30		0		89	
03:00	0	0	33	151	0	4	34	128	0	4	67	279
03:15	0		29		0		29		0		58	
03:30	0		44		0		43		0		87	
03:45	0		45		4		22		4		67	
04:00	0	3	35	156	2	15	44	144	2	18	79	300
04:15	2		42		2		36		4		78	
04:30	0		42		6		25		6		67	
04:45	1		37		5		39		6		76	
05:00	0	5	40	176	12	53	30	157	12	58	70	333
05:15	2		42		16		41		18		83	
05:30	2		44		14		48		16		92	
05:45	1		50		11		38		12		88	
06:00	4	45	48	157	23	123	34	104	27	168	82	261
06:15	6		35		32		26		38		61	
06:30	17		40		36		30		53		70	
06:45	18		34		32		14		50		48	
07:00	14	74	30	128	48	214	12	53	62	288	42	181
07:15	10		34		72		14		82		48	
07:30	16		28		54		11		70		39	
07:45	34		36		40		16		74		52	
08:00	22	99	30	101	72	210	21	57	94	309	51	158
08:15	32		22		66		18		98		40	
08:30	26		23		44		14		70		37	
08:45	19		26		28		4		47		30	
09:00	22	56	30	76	30	112	5	32	52	168	35	108
09:15	11		20		24		12		35		32	
09:30	14		20		33		12		47		32	
09:45	9		6		25		3		34		9	
10:00	20	79	8	30	32	109	2	18	52	188	10	48
10:15	22		6		26		4		48		10	
10:30	15		8		28		0		43		8	
10:45	22		8		23		12		45		20	
11:00	22	65	10	18	28	102	2	12	50	167	12	30
11:15	15		4		20		4		35		8	
11:30	14		2		26		2		40		4	
11:45	14		2		28		4		42		6	
Totals	439		1,332		951		1,008		1,390		2,340	
Split%	31.6		56.9		68.4		43.1					
Day Totals		1,771				1,959				3,730		
Day Splits		47.5				52.5						
Peak Hour	07:45		05:15		07:15		05:15		07:30		05:15	
Volume	114		184		238		161		336		345	
Factor	0.84		0.92		0.83		0.84		0.86		0.94	

Day: Thursday

Data File : D1402243

LINSCOTT LAW & GREENSPAN engineers

TABLE 1
EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS
ESPERANZA HILLS, COUNTY OF ORANGE

Key Intersection	Time Period	(1) Existing Traffic Conditions Delay (s/v)	(1) Existing Traffic Conditions LOS	(2) Existing Plus Project Traffic Conditions Delay (s/v)	(2) Existing Plus Project Traffic Conditions LOS	(3) Significant Impact Yes/No
14. Weir Canyon Road at SR-91 WB Ramps	AM	11.7	B	11.8	B	No
	PM	10.3	B	10.6	B	No
15. Weir Canyon Road at SR-91 EB Ramps	AM	8.7	A	8.8	A	No
	PM	22.1	C	24.8	C	No

Note:

- s/v = seconds per vehicle

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	284	0	558	0	1310	0	0	936	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				199	0	694	0	1379	0	0	985	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				509	0	909	0	2659	0	0	2659	0
Arrive On Green				0.29	0.00	0.29	0.00	0.17	0.00	0.00	0.52	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				199	0	694	0	1379	0	0	985	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				3.8	0.0	8.4	0.0	10.4	0.0	0.0	4.8	0.0
Cycle Q Clear(g_c), s				3.8	0.0	8.4	0.0	10.4	0.0	0.0	4.8	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				509	0	909	0	2659	0	0	2659	0
V/C Ratio(X)				0.39	0.00	0.76	0.00	0.52	0.00	0.00	0.37	0.00
Avail Cap(c_a), veh/h				633	0	1129	0	2659	0	0	2659	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.73	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.0	0.0	13.7	0.0	12.6	0.0	0.0	5.9	0.0
Incr Delay (d2), s/veh				0.5	0.0	2.5	0.0	0.5	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	4.0	0.0	5.0	0.0	0.0	2.3	0.0
LnGrp Delay(d),s/veh				12.5	0.0	16.2	0.0	13.1	0.0	0.0	6.3	0.0
LnGrp LOS				B		B		B			A	
Approach Vol, veh/h					893			1379			985	
Approach Delay, s/veh					15.4			13.1			6.3	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		28.9				28.9		16.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		22.0				22.0		15.0
Max Q Clear Time (g_c+I1), s		12.4				6.8		10.4
Green Ext Time (p_c), s		8.2				12.2		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	657	0	561	0	0	0	0	1341	0	0	871	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	876	0	394				0	1412	0	0	917	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	1211	0	540				0	2358	0	0	2358	0
Arrive On Green	0.34	0.00	0.34				0.00	0.46	0.00	0.00	0.93	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5421	0
Grp Volume(v), veh/h	876	0	394				0	1412	0	0	917	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	8.9	0.0	8.9				0.0	8.4	0.0	0.0	0.8	0.0
Cycle Q Clear(g_c), s	8.9	0.0	8.9				0.0	8.4	0.0	0.0	0.8	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	1211	0	540				0	2358	0	0	2358	0
V/C Ratio(X)	0.72	0.00	0.73				0.00	0.60	0.00	0.00	0.39	0.00
Avail Cap(c_a), veh/h	1558	0	695				0	2358	0	0	2358	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.92	0.00
Uniform Delay (d), s/veh	11.8	0.0	11.8				0.0	8.2	0.0	0.0	0.8	0.0
Incr Delay (d2), s/veh	1.2	0.0	2.8				0.0	1.1	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	4.3				0.0	4.2	0.0	0.0	0.4	0.0
LnGrp Delay(d),s/veh	13.0	0.0	14.7				0.0	9.3	0.0	0.0	1.3	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		1270						1412			917	
Approach Delay, s/veh		13.5						9.3			1.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		27.0		18.0		27.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		19.0		18.0		19.0		
Max Q Clear Time (g_c+I1), s		10.4		10.9		2.8		
Green Ext Time (p_c), s		7.3		3.0		12.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰↰	↔	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	525	0	704	0	1486	0	0	1222	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				813	0	463	0	1564	0	0	1286	0
Adj No. of Lanes				2	0	1	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				1340	0	598	0	2261	0	0	2261	0
Arrive On Green				0.38	0.00	0.38	0.00	0.59	0.00	0.00	0.44	0.00
Sat Flow, veh/h				3548	0	1583	0	5421	0	0	5421	0
Grp Volume(v), veh/h				813	0	463	0	1564	0	0	1286	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				8.3	0.0	11.6	0.0	9.6	0.0	0.0	8.5	0.0
Cycle Q Clear(g_c), s				8.3	0.0	11.6	0.0	9.6	0.0	0.0	8.5	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1340	0	598	0	2261	0	0	2261	0
V/C Ratio(X)				0.61	0.00	0.77	0.00	0.69	0.00	0.00	0.57	0.00
Avail Cap(c_a), veh/h				1735	0	774	0	2261	0	0	2261	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.40	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.3	0.0	12.3	0.0	7.1	0.0	0.0	9.3	0.0
Incr Delay (d2), s/veh				0.4	0.0	3.7	0.0	0.7	0.0	0.0	1.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.1	0.0	5.6	0.0	4.4	0.0	0.0	4.1	0.0
LnGrp Delay(d),s/veh				11.8	0.0	16.0	0.0	7.8	0.0	0.0	10.3	0.0
LnGrp LOS				B		B		A			B	
Approach Vol, veh/h					1276			1564			1286	
Approach Delay, s/veh					13.3			7.8			10.3	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		29.0				29.0		21.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		20.0				20.0		22.0
Max Q Clear Time (g_c+I1), s		11.6				10.5		13.6
Green Ext Time (p_c), s		7.8				8.8		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	565	0	1015	0	0	0	0	1801	0	0	1788	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	397	0	1281				0	1896	0	0	1882	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	745	0	1330				0	2136	0	0	2136	0
Arrive On Green	0.42	0.00	0.42				0.00	0.42	0.00	0.00	0.28	0.00
Sat Flow, veh/h	1774	0	3167				0	5421	0	0	5421	0
Grp Volume(v), veh/h	397	0	1281				0	1896	0	0	1882	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	8.4	0.0	19.7				0.0	17.2	0.0	0.0	17.7	0.0
Cycle Q Clear(g_c), s	8.4	0.0	19.7				0.0	17.2	0.0	0.0	17.7	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	745	0	1330				0	2136	0	0	2136	0
V/C Ratio(X)	0.53	0.00	0.96				0.00	0.89	0.00	0.00	0.88	0.00
Avail Cap(c_a), veh/h	745	0	1330				0	2136	0	0	2136	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	0.67	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.77	0.00
Uniform Delay (d), s/veh	10.8	0.0	14.1				0.0	13.4	0.0	0.0	16.8	0.0
Incr Delay (d2), s/veh	0.7	0.0	16.6				0.0	6.0	0.0	0.0	4.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	11.6				0.0	9.1	0.0	0.0	9.1	0.0
LnGrp Delay(d),s/veh	11.6	0.0	30.8				0.0	19.4	0.0	0.0	21.2	0.0
LnGrp LOS	B		C					B			C	
Approach Vol, veh/h		1678						1896			1882	
Approach Delay, s/veh		26.2						19.4			21.2	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		25.0		25.0		25.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		21.0		21.0		21.0		
Max Q Clear Time (g_c+I1), s		19.2		21.7		19.7		
Green Ext Time (p_c), s		1.7		0.0		1.3		

Intersection Summary			
HCM 2010 Ctrl Delay			22.1
HCM 2010 LOS			C

Notes
User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✥	↱		↑↑↑			↓↓↓	
Volume (veh/h)	0	0	0	284	0	569	0	1320	0	0	981	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				199	0	706	0	1389	0	0	1033	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				514	0	917	0	2649	0	0	2649	0
Arrive On Green				0.29	0.00	0.29	0.00	0.17	0.00	0.00	0.52	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				199	0	706	0	1389	0	0	1033	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				3.8	0.0	8.6	0.0	10.5	0.0	0.0	5.2	0.0
Cycle Q Clear(g_c), s				3.8	0.0	8.6	0.0	10.5	0.0	0.0	5.2	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				514	0	917	0	2649	0	0	2649	0
V/C Ratio(X)				0.39	0.00	0.77	0.00	0.52	0.00	0.00	0.39	0.00
Avail Cap(c_a), veh/h				630	0	1125	0	2649	0	0	2649	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.72	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.0	0.0	13.7	0.0	12.7	0.0	0.0	6.1	0.0
Incr Delay (d2), s/veh				0.5	0.0	2.7	0.0	0.5	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	4.1	0.0	5.1	0.0	0.0	2.5	0.0
LnGrp Delay(d),s/veh				12.5	0.0	16.4	0.0	13.3	0.0	0.0	6.5	0.0
LnGrp LOS				B		B		B			A	
Approach Vol, veh/h					905			1389			1033	
Approach Delay, s/veh					15.5			13.3			6.5	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		28.8				28.8		16.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		22.0				22.0		15.0
Max Q Clear Time (g_c+I1), s		12.5				7.2		10.6
Green Ext Time (p_c), s		8.2				12.1		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	663	0	561	0	0	0	0	1345	0	0	884	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	882	0	394				0	1416	0	0	931	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	1211	0	541				0	2357	0	0	2357	0
Arrive On Green	0.34	0.00	0.34				0.00	0.46	0.00	0.00	0.93	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5421	0
Grp Volume(v), veh/h	882	0	394				0	1416	0	0	931	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	8.9	0.0	8.9				0.0	8.5	0.0	0.0	0.9	0.0
Cycle Q Clear(g_c), s	8.9	0.0	8.9				0.0	8.5	0.0	0.0	0.9	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	1211	0	541				0	2357	0	0	2357	0
V/C Ratio(X)	0.73	0.00	0.73				0.00	0.60	0.00	0.00	0.40	0.00
Avail Cap(c_a), veh/h	1558	0	695				0	2357	0	0	2357	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.91	0.00
Uniform Delay (d), s/veh	11.8	0.0	11.8				0.0	8.2	0.0	0.0	0.8	0.0
Incr Delay (d2), s/veh	1.3	0.0	2.8				0.0	1.1	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	4.3				0.0	4.2	0.0	0.0	0.4	0.0
LnGrp Delay(d),s/veh	13.1	0.0	14.6				0.0	9.3	0.0	0.0	1.3	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		1276						1416			931	
Approach Delay, s/veh		13.6						9.3			1.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		27.0		18.0		27.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		19.0		18.0		19.0		
Max Q Clear Time (g_c+I1), s		10.5		10.9		2.9		
Green Ext Time (p_c), s		7.3		3.1		12.8		

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	525	0	740	0	1520	0	0	1251	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				831	0	482	0	1600	0	0	1317	0
Adj No. of Lanes				2	0	1	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				1369	0	611	0	2231	0	0	2231	0
Arrive On Green				0.39	0.00	0.39	0.00	0.58	0.00	0.00	0.44	0.00
Sat Flow, veh/h				3548	0	1583	0	5421	0	0	5421	0
Grp Volume(v), veh/h				831	0	482	0	1600	0	0	1317	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				8.6	0.0	12.3	0.0	10.3	0.0	0.0	8.9	0.0
Cycle Q Clear(g_c), s				8.6	0.0	12.3	0.0	10.3	0.0	0.0	8.9	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1369	0	611	0	2231	0	0	2231	0
V/C Ratio(X)				0.61	0.00	0.79	0.00	0.72	0.00	0.00	0.59	0.00
Avail Cap(c_a), veh/h				1712	0	764	0	2231	0	0	2231	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.31	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.2	0.0	12.4	0.0	7.5	0.0	0.0	9.7	0.0
Incr Delay (d2), s/veh				0.4	0.0	4.4	0.0	0.6	0.0	0.0	1.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	0.0	6.0	0.0	4.8	0.0	0.0	4.4	0.0
LnGrp Delay(d),s/veh				11.7	0.0	16.8	0.0	8.1	0.0	0.0	10.8	0.0
LnGrp LOS				B		B		A			B	
Approach Vol, veh/h					1313			1600			1317	
Approach Delay, s/veh					13.5			8.1			10.8	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		28.4				28.4		21.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		20.0				20.0		22.0
Max Q Clear Time (g_c+I1), s		12.3				10.9		14.3
Green Ext Time (p_c), s		7.2				8.4		3.3

Intersection Summary			
HCM 2010 Ctrl Delay			10.6
HCM 2010 LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✣	↱					↑↑↑			↑↑↑	
Volume (veh/h)	584	0	1015	0	0	0	0	1816	0	0	1796	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	410	0	1288				0	1912	0	0	1891	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	802	0	1431				0	1961	0	0	1961	0
Arrive On Green	0.45	0.00	0.45				0.00	0.39	0.00	0.00	0.39	0.00
Sat Flow, veh/h	1774	0	3167				0	5421	0	0	5421	0
Grp Volume(v), veh/h	410	0	1288				0	1912	0	0	1891	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	8.1	0.0	18.5				0.0	18.2	0.0	0.0	17.9	0.0
Cycle Q Clear(g_c), s	8.1	0.0	18.5				0.0	18.2	0.0	0.0	17.9	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	802	0	1431				0	1961	0	0	1961	0
V/C Ratio(X)	0.51	0.00	0.90				0.00	0.97	0.00	0.00	0.96	0.00
Avail Cap(c_a), veh/h	828	0	1478				0	1961	0	0	1961	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.76	0.00
Uniform Delay (d), s/veh	9.6	0.0	12.5				0.0	14.9	0.0	0.0	14.8	0.0
Incr Delay (d2), s/veh	0.5	0.0	7.7				0.0	15.2	0.0	0.0	11.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	9.4				0.0	11.1	0.0	0.0	10.2	0.0
LnGrp Delay(d),s/veh	10.1	0.0	20.2				0.0	30.1	0.0	0.0	25.9	0.0
LnGrp LOS	B		C					C			C	
Approach Vol, veh/h		1698						1912			1891	
Approach Delay, s/veh		17.8						30.1			25.9	
Approach LOS		B						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		23.7		26.3		23.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		19.0		23.0		19.0		
Max Q Clear Time (g_c+I1), s		20.2		20.5		19.9		
Green Ext Time (p_c), s		0.0		1.8		0.0		

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

TABLE 2
YEAR 2020 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS
ESPERANZA HILLS, COUNTY OF ORANGE

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact
		Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Yes/No
14. Weir Canyon Road at SR-91 WB Ramps	AM	11.7	B	13.0	B	13.1	B	No
	PM	10.3	B	11.7	B	12.6	B	No
15. Weir Canyon Road at SR-91 EB Ramps	AM	8.7	A	10.7	B	10.7	B	No
	PM	22.1	C	23.0	C	27.8	C	No

Note:
- s/v = seconds per vehicle

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✣	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	308	0	613	0	1435	0	0	1039	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				216	0	761	0	1511	0	0	1094	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				548	0	978	0	2636	0	0	2636	0
Arrive On Green				0.31	0.00	0.31	0.00	0.17	0.00	0.00	0.52	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				216	0	761	0	1511	0	0	1094	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				4.4	0.0	10.1	0.0	12.6	0.0	0.0	6.1	0.0
Cycle Q Clear(g_c), s				4.4	0.0	10.1	0.0	12.6	0.0	0.0	6.1	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				548	0	978	0	2636	0	0	2636	0
V/C Ratio(X)				0.39	0.00	0.78	0.00	0.57	0.00	0.00	0.41	0.00
Avail Cap(c_a), veh/h				690	0	1231	0	2636	0	0	2636	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.64	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.6	0.0	14.6	0.0	14.5	0.0	0.0	6.8	0.0
Incr Delay (d2), s/veh				0.5	0.0	2.5	0.0	0.6	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.2	0.0	4.7	0.0	6.1	0.0	0.0	3.0	0.0
LnGrp Delay(d),s/veh				13.1	0.0	17.1	0.0	15.1	0.0	0.0	7.3	0.0
LnGrp LOS				B		B		B			A	
Approach Vol, veh/h					977			1511			1094	
Approach Delay, s/veh					16.2			15.1			7.3	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		31.7				31.7		18.3
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		24.0				24.0		18.0
Max Q Clear Time (g_c+I1), s		14.6				8.1		12.1
Green Ext Time (p_c), s		8.3				13.4		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.0
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	726	0	606	0	0	0	0	1450	0	0	944	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	962	0	425				0	1526	0	0	994	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	1340	0	598				0	2227	0	0	2227	0
Arrive On Green	0.38	0.00	0.38				0.00	0.44	0.00	0.00	0.58	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5421	0
Grp Volume(v), veh/h	962	0	425				0	1526	0	0	994	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	10.0	0.0	9.9				0.0	10.5	0.0	0.0	4.8	0.0
Cycle Q Clear(g_c), s	10.0	0.0	9.9				0.0	10.5	0.0	0.0	4.8	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	1340	0	598				0	2227	0	0	2227	0
V/C Ratio(X)	0.72	0.00	0.71				0.00	0.69	0.00	0.00	0.45	0.00
Avail Cap(c_a), veh/h	1881	0	839				0	2227	0	0	2227	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.90	0.00
Uniform Delay (d), s/veh	11.5	0.0	11.5				0.0	9.8	0.0	0.0	6.1	0.0
Incr Delay (d2), s/veh	0.8	0.0	1.7				0.0	1.7	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	4.5				0.0	5.2	0.0	0.0	2.2	0.0
LnGrp Delay(d),s/veh	12.3	0.0	13.1				0.0	11.5	0.0	0.0	6.7	0.0
LnGrp LOS	B		B					B			A	
Approach Vol, veh/h		1387						1526			994	
Approach Delay, s/veh		12.6						11.5			6.7	
Approach LOS		B						B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		29.6		20.4		29.6						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		19.0		23.0		19.0						
Max Q Clear Time (g_c+I1), s		12.5		12.0		6.8						
Green Ext Time (p_c), s		5.9		4.3		10.5						
Intersection Summary												
HCM 2010 Ctrl Delay			10.7									
HCM 2010 LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✣	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	569	0	790	0	1659	0	0	1340	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				894	0	516	0	1746	0	0	1411	0
Adj No. of Lanes				2	0	1	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				1359	0	606	0	2208	0	0	2208	0
Arrive On Green				0.38	0.00	0.38	0.00	0.58	0.00	0.00	0.43	0.00
Sat Flow, veh/h				3548	0	1583	0	5421	0	0	5421	0
Grp Volume(v), veh/h				894	0	516	0	1746	0	0	1411	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				9.1	0.0	13.1	0.0	11.7	0.0	0.0	9.5	0.0
Cycle Q Clear(g_c), s				9.1	0.0	13.1	0.0	11.7	0.0	0.0	9.5	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1359	0	606	0	2208	0	0	2208	0
V/C Ratio(X)				0.66	0.00	0.85	0.00	0.79	0.00	0.00	0.64	0.00
Avail Cap(c_a), veh/h				1459	0	651	0	2208	0	0	2208	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.39	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.1	0.0	12.4	0.0	7.7	0.0	0.0	9.7	0.0
Incr Delay (d2), s/veh				1.0	0.0	9.9	0.0	1.2	0.0	0.0	1.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.5	0.0	7.3	0.0	5.4	0.0	0.0	4.6	0.0
LnGrp Delay(d),s/veh				12.1	0.0	22.3	0.0	8.9	0.0	0.0	11.1	0.0
LnGrp LOS				B		C		A			B	
Approach Vol, veh/h					1410			1746			1411	
Approach Delay, s/veh					15.9			8.9			11.1	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		24.2				24.2		20.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		19.0				19.0		18.0
Max Q Clear Time (g_c+I1), s		13.7				11.5		15.1
Green Ext Time (p_c), s		5.1				7.1		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✥	↱↱					↑↑↑			↑↑↑	
Volume (veh/h)	659	0	1096	0	0	0	0	1949	0	0	1933	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	463	0	1402				0	2052	0	0	2035	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	808	0	1442				0	2317	0	0	2317	0
Arrive On Green	0.46	0.00	0.46				0.00	0.46	0.00	0.00	0.91	0.00
Sat Flow, veh/h	1774	0	3167				0	5421	0	0	5421	0
Grp Volume(v), veh/h	463	0	1402				0	2052	0	0	2035	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	17.3	0.0	38.9				0.0	33.1	0.0	0.0	16.0	0.0
Cycle Q Clear(g_c), s	17.3	0.0	38.9				0.0	33.1	0.0	0.0	16.0	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	808	0	1442				0	2317	0	0	2317	0
V/C Ratio(X)	0.57	0.00	0.97				0.00	0.89	0.00	0.00	0.88	0.00
Avail Cap(c_a), veh/h	808	0	1443				0	2317	0	0	2317	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.69	0.00
Uniform Delay (d), s/veh	18.1	0.0	23.9				0.0	22.4	0.0	0.0	2.9	0.0
Incr Delay (d2), s/veh	1.0	0.0	17.4				0.0	5.4	0.0	0.0	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	20.4				0.0	16.6	0.0	0.0	6.8	0.0
LnGrp Delay(d),s/veh	19.0	0.0	41.3				0.0	27.8	0.0	0.0	6.5	0.0
LnGrp LOS	B		D					C			A	
Approach Vol, veh/h		1865						2052			2035	
Approach Delay, s/veh		35.8						27.8			6.5	
Approach LOS		D						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		45.0		45.0		45.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		41.0		41.0		41.0		
Max Q Clear Time (g_c+I1), s		35.1		40.9		18.0		
Green Ext Time (p_c), s		5.8		0.1		22.3		

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✥	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	308	0	624	0	1445	0	0	1084	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				216	0	773	0	1521	0	0	1141	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				553	0	986	0	2626	0	0	2626	0
Arrive On Green				0.31	0.00	0.31	0.00	0.17	0.00	0.00	0.52	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				216	0	773	0	1521	0	0	1141	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				4.4	0.0	10.3	0.0	12.8	0.0	0.0	6.5	0.0
Cycle Q Clear(g_c), s				4.4	0.0	10.3	0.0	12.8	0.0	0.0	6.5	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				553	0	986	0	2626	0	0	2626	0
V/C Ratio(X)				0.39	0.00	0.78	0.00	0.58	0.00	0.00	0.43	0.00
Avail Cap(c_a), veh/h				687	0	1226	0	2626	0	0	2626	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.64	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				12.5	0.0	14.6	0.0	14.6	0.0	0.0	7.0	0.0
Incr Delay (d2), s/veh				0.5	0.0	2.7	0.0	0.6	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.2	0.0	4.9	0.0	6.2	0.0	0.0	3.1	0.0
LnGrp Delay(d),s/veh				13.0	0.0	17.3	0.0	15.2	0.0	0.0	7.5	0.0
LnGrp LOS				B		B		B			A	
Approach Vol, veh/h					989			1521			1141	
Approach Delay, s/veh					16.3			15.2			7.5	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		31.5				31.5		18.5
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		24.0				24.0		18.0
Max Q Clear Time (g_c+I1), s		14.8				8.5		12.3
Green Ext Time (p_c), s		8.3				13.3		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	732	0	606	0	0	0	0	1454	0	0	957	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	969	0	425				0	1531	0	0	1007	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	1345	0	600				0	2222	0	0	2222	0
Arrive On Green	0.38	0.00	0.38				0.00	0.44	0.00	0.00	0.58	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5421	0
Grp Volume(v), veh/h	969	0	425				0	1531	0	0	1007	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	10.1	0.0	9.9				0.0	10.5	0.0	0.0	4.9	0.0
Cycle Q Clear(g_c), s	10.1	0.0	9.9				0.0	10.5	0.0	0.0	4.9	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	1345	0	600				0	2222	0	0	2222	0
V/C Ratio(X)	0.72	0.00	0.71				0.00	0.69	0.00	0.00	0.45	0.00
Avail Cap(c_a), veh/h	1877	0	837				0	2222	0	0	2222	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.89	0.00
Uniform Delay (d), s/veh	11.5	0.0	11.5				0.0	9.9	0.0	0.0	6.2	0.0
Incr Delay (d2), s/veh	0.8	0.0	1.6				0.0	1.8	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	4.5				0.0	5.2	0.0	0.0	2.4	0.0
LnGrp Delay(d),s/veh	12.4	0.0	13.1				0.0	11.6	0.0	0.0	6.8	0.0
LnGrp LOS	B		B					B			A	
Approach Vol, veh/h		1394						1531			1007	
Approach Delay, s/veh		12.6						11.6			6.8	
Approach LOS		B						B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		29.5		20.5		29.5		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		19.0		23.0		19.0		
Max Q Clear Time (g_c+I1), s		12.5		12.1		6.9		
Green Ext Time (p_c), s		5.8		4.3		10.4		

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✥	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	569	0	826	0	1693	0	0	1369	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				399	0	1083	0	1782	0	0	1441	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				693	0	1237	0	2180	0	0	2180	0
Arrive On Green				0.39	0.00	0.39	0.00	0.57	0.00	0.00	0.43	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				399	0	1083	0	1782	0	0	1441	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				7.8	0.0	14.0	0.0	12.5	0.0	0.0	10.0	0.0
Cycle Q Clear(g_c), s				7.8	0.0	14.0	0.0	12.5	0.0	0.0	10.0	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				693	0	1237	0	2180	0	0	2180	0
V/C Ratio(X)				0.58	0.00	0.88	0.00	0.82	0.00	0.00	0.66	0.00
Avail Cap(c_a), veh/h				721	0	1286	0	2180	0	0	2180	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.35	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				10.6	0.0	12.5	0.0	8.1	0.0	0.0	10.1	0.0
Incr Delay (d2), s/veh				1.1	0.0	6.9	0.0	1.3	0.0	0.0	1.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.0	0.0	7.2	0.0	6.0	0.0	0.0	5.0	0.0
LnGrp Delay(d),s/veh				11.7	0.0	19.4	0.0	9.4	0.0	0.0	11.7	0.0
LnGrp LOS				B		B		A			B	
Approach Vol, veh/h					1482			1782			1441	
Approach Delay, s/veh					17.3			9.4			11.7	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		23.7				23.7		21.3
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		19.0				19.0		18.0
Max Q Clear Time (g_c+I1), s		14.5				12.0		16.0
Green Ext Time (p_c), s		4.4				6.7		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✣	↱					↑↑↑			↑↑↑	
Volume (veh/h)	678	0	1096	0	0	0	0	1964	0	0	1941	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	476	0	1409				0	2067	0	0	2043	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	824	0	1471				0	2269	0	0	2269	0
Arrive On Green	0.46	0.00	0.46				0.00	0.45	0.00	0.00	0.59	0.00
Sat Flow, veh/h	1774	0	3167				0	5421	0	0	5421	0
Grp Volume(v), veh/h	476	0	1409				0	2067	0	0	2043	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	17.6	0.0	38.5				0.0	34.0	0.0	0.0	31.5	0.0
Cycle Q Clear(g_c), s	17.6	0.0	38.5				0.0	34.0	0.0	0.0	31.5	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	824	0	1471				0	2269	0	0	2269	0
V/C Ratio(X)	0.58	0.00	0.96				0.00	0.91	0.00	0.00	0.90	0.00
Avail Cap(c_a), veh/h	831	0	1483				0	2269	0	0	2269	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.67	0.00
Uniform Delay (d), s/veh	17.6	0.0	23.1				0.0	23.2	0.0	0.0	16.5	0.0
Incr Delay (d2), s/veh	1.0	0.0	14.5				0.0	6.9	0.0	0.0	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.0	19.6				0.0	17.3	0.0	0.0	15.4	0.0
LnGrp Delay(d),s/veh	18.5	0.0	37.6				0.0	30.1	0.0	0.0	20.9	0.0
LnGrp LOS	B		D					C			C	
Approach Vol, veh/h		1885						2067			2043	
Approach Delay, s/veh		32.8						30.1			20.9	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		44.3		45.7		44.3		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		40.0		42.0		40.0		
Max Q Clear Time (g_c+I1), s		36.0		40.5		33.5		
Green Ext Time (p_c), s		4.0		1.2		6.5		

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

TABLE 3
YEAR 2035 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS
ESPERANZA HILLS, COUNTY OF ORANGE

Key Intersection		Time Period	(1) Existing Traffic Conditions		(2) Year 2035 Cumulative Traffic Conditions		(3) Year 2035 Cumulative Plus Project Traffic Conditions		(4) Significant Impact
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Yes/No
14.	Weir Canyon Road at SR-91 WB Ramps	AM	11.7	B	13.5	B	13.7	B	No
		PM	10.3	B	13.3	B	14.3	B	No
15.	Weir Canyon Road at SR-91 EB Ramps	AM	8.7	A	15.3	B	15.4	B	No
		PM	22.1	C	46.8	D	47.9	D	No

Note:
- s/v = seconds per vehicle

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✥	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	339	0	674	0	1771	0	0	1143	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				226	0	795	0	1771	0	0	1143	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				556	0	993	0	2756	0	0	2756	0
Arrive On Green				0.31	0.00	0.31	0.00	0.36	0.00	0.00	0.54	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				226	0	795	0	1771	0	0	1143	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				5.5	0.0	12.7	0.0	16.0	0.0	0.0	7.4	0.0
Cycle Q Clear(g_c), s				5.5	0.0	12.7	0.0	16.0	0.0	0.0	7.4	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				556	0	993	0	2756	0	0	2756	0
V/C Ratio(X)				0.41	0.00	0.80	0.00	0.64	0.00	0.00	0.41	0.00
Avail Cap(c_a), veh/h				705	0	1259	0	2756	0	0	2756	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.51	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				14.9	0.0	17.4	0.0	13.2	0.0	0.0	7.5	0.0
Incr Delay (d2), s/veh				0.5	0.0	3.0	0.0	0.6	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	5.9	0.0	7.7	0.0	0.0	3.5	0.0
LnGrp Delay(d),s/veh				15.4	0.0	20.4	0.0	13.8	0.0	0.0	8.0	0.0
LnGrp LOS				B		C		B			A	
Approach Vol, veh/h					1021			1771			1143	
Approach Delay, s/veh					19.3			13.8			8.0	
Approach LOS					B			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		38.6				38.6		21.4				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		30.0				30.0		22.0				
Max Q Clear Time (g_c+I1), s		18.0				9.4		14.7				
Green Ext Time (p_c), s		10.9				17.9		2.6				
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	799	0	667	0	0	0	0	1873	0	0	1038	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	1007	0	445				0	1873	0	0	1038	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	1333	0	595				0	2405	0	0	2405	0
Arrive On Green	0.38	0.00	0.38				0.00	0.47	0.00	0.00	0.16	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5421	0
Grp Volume(v), veh/h	1007	0	445				0	1873	0	0	1038	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	13.1	0.0	12.9				0.0	16.2	0.0	0.0	9.8	0.0
Cycle Q Clear(g_c), s	13.1	0.0	12.9				0.0	16.2	0.0	0.0	9.8	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	1333	0	595				0	2405	0	0	2405	0
V/C Ratio(X)	0.76	0.00	0.75				0.00	0.78	0.00	0.00	0.43	0.00
Avail Cap(c_a), veh/h	1813	0	809				0	2405	0	0	2405	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.90	0.00
Uniform Delay (d), s/veh	14.4	0.0	14.3				0.0	11.6	0.0	0.0	15.9	0.0
Incr Delay (d2), s/veh	1.3	0.0	2.6				0.0	2.6	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	6.0				0.0	8.0	0.0	0.0	4.7	0.0
LnGrp Delay(d),s/veh	15.6	0.0	16.9				0.0	14.2	0.0	0.0	16.4	0.0
LnGrp LOS	B		B					B			B	
Approach Vol, veh/h		1452						1873			1038	
Approach Delay, s/veh		16.0						14.2			16.4	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		36.1		23.9		36.1		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		25.0		27.0		25.0		
Max Q Clear Time (g_c+I1), s		18.2		15.1		11.8		
Green Ext Time (p_c), s		6.4		4.8		12.0		

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✣	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	626	0	869	0	1825	0	0	1474	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				934	0	539	0	1825	0	0	1474	0
Adj No. of Lanes				2	0	1	0	3	0	0	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				1426	0	636	0	2326	0	0	2326	0
Arrive On Green				0.40	0.00	0.40	0.00	0.61	0.00	0.00	0.46	0.00
Sat Flow, veh/h				3548	0	1583	0	5421	0	0	5421	0
Grp Volume(v), veh/h				934	0	539	0	1825	0	0	1474	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				12.1	0.0	17.5	0.0	15.3	0.0	0.0	12.6	0.0
Cycle Q Clear(g_c), s				12.1	0.0	17.5	0.0	15.3	0.0	0.0	12.6	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				1426	0	636	0	2326	0	0	2326	0
V/C Ratio(X)				0.65	0.00	0.85	0.00	0.78	0.00	0.00	0.63	0.00
Avail Cap(c_a), veh/h				1623	0	724	0	2326	0	0	2326	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.27	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				13.8	0.0	15.4	0.0	9.0	0.0	0.0	11.8	0.0
Incr Delay (d2), s/veh				0.8	0.0	8.4	0.0	0.8	0.0	0.0	1.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.0	0.0	9.1	0.0	7.1	0.0	0.0	6.2	0.0
LnGrp Delay(d),s/veh				14.6	0.0	23.8	0.0	9.8	0.0	0.0	13.1	0.0
LnGrp LOS				B		C		A			B	
Approach Vol, veh/h					1473			1825			1474	
Approach Delay, s/veh					18.0			9.8			13.1	
Approach LOS					B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.1				33.1		26.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		26.0				26.0		26.0
Max Q Clear Time (g_c+I1), s		17.3				14.6		19.5
Green Ext Time (p_c), s		8.3				10.8		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	725	0	1485	0	0	0	0	2121	0	0	2196	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	483	0	1744				0	2121	0	0	2196	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	887	0	1583				0	2204	0	0	2204	0
Arrive On Green	0.50	0.00	0.50				0.00	0.43	0.00	0.00	0.87	0.00
Sat Flow, veh/h	1774	0	3167				0	5421	0	0	5421	0
Grp Volume(v), veh/h	483	0	1744				0	2121	0	0	2196	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	22.4	0.0	60.0				0.0	48.7	0.0	0.0	50.7	0.0
Cycle Q Clear(g_c), s	22.4	0.0	60.0				0.0	48.7	0.0	0.0	50.7	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	887	0	1583				0	2204	0	0	2204	0
V/C Ratio(X)	0.54	0.00	1.10				0.00	0.96	0.00	0.00	1.00	0.00
Avail Cap(c_a), veh/h	887	0	1583				0	2204	0	0	2204	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.70	0.00
Uniform Delay (d), s/veh	20.6	0.0	30.0				0.0	33.1	0.0	0.0	7.9	0.0
Incr Delay (d2), s/veh	0.7	0.0	55.8				0.0	12.2	0.0	0.0	15.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	0.0	38.2				0.0	25.1	0.0	0.0	24.2	0.0
LnGrp Delay(d),s/veh	21.3	0.0	85.8				0.0	45.2	0.0	0.0	23.1	0.0
LnGrp LOS	C		F					D			C	
Approach Vol, veh/h		2227						2121			2196	
Approach Delay, s/veh		71.8						45.2			23.1	
Approach LOS		E						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		56.0		64.0		56.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		52.0		60.0		52.0		
Max Q Clear Time (g_c+I1), s		50.7		62.0		52.7		
Green Ext Time (p_c), s		1.3		0.0		0.0		

Intersection Summary			
HCM 2010 Ctrl Delay			46.8
HCM 2010 LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	✥	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	339	0	685	0	1781	0	0	1188	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				226	0	806	0	1781	0	0	1188	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				561	0	1001	0	2746	0	0	2746	0
Arrive On Green				0.32	0.00	0.32	0.00	0.36	0.00	0.00	0.54	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				226	0	806	0	1781	0	0	1188	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				5.5	0.0	13.0	0.0	16.2	0.0	0.0	7.8	0.0
Cycle Q Clear(g_c), s				5.5	0.0	13.0	0.0	16.2	0.0	0.0	7.8	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				561	0	1001	0	2746	0	0	2746	0
V/C Ratio(X)				0.40	0.00	0.81	0.00	0.65	0.00	0.00	0.43	0.00
Avail Cap(c_a), veh/h				702	0	1254	0	2746	0	0	2746	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.51	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				14.9	0.0	17.4	0.0	13.3	0.0	0.0	7.7	0.0
Incr Delay (d2), s/veh				0.5	0.0	3.2	0.0	0.6	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.8	0.0	6.0	0.0	7.7	0.0	0.0	3.8	0.0
LnGrp Delay(d),s/veh				15.4	0.0	20.6	0.0	14.0	0.0	0.0	8.2	0.0
LnGrp LOS				B		C		B			A	
Approach Vol, veh/h					1032			1781			1188	
Approach Delay, s/veh					19.4			14.0			8.2	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		38.4				38.4		21.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		30.0				30.0		22.0
Max Q Clear Time (g_c+I1), s		18.2				9.8		15.0
Green Ext Time (p_c), s		10.8				17.7		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰↰	✥	↱					↑↑↑			↑↑↑	
Volume (veh/h)	805	0	667	0	0	0	0	1877	0	0	1051	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	1013	0	445				0	1877	0	0	1051	0
Adj No. of Lanes	2	0	1				0	3	0	0	3	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	1337	0	597				0	2400	0	0	2400	0
Arrive On Green	0.38	0.00	0.38				0.00	0.47	0.00	0.00	0.16	0.00
Sat Flow, veh/h	3548	0	1583				0	5421	0	0	5421	0
Grp Volume(v), veh/h	1013	0	445				0	1877	0	0	1051	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	13.2	0.0	12.9				0.0	16.4	0.0	0.0	9.9	0.0
Cycle Q Clear(g_c), s	13.2	0.0	12.9				0.0	16.4	0.0	0.0	9.9	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	1337	0	597				0	2400	0	0	2400	0
V/C Ratio(X)	0.76	0.00	0.75				0.00	0.78	0.00	0.00	0.44	0.00
Avail Cap(c_a), veh/h	1809	0	807				0	2400	0	0	2400	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.89	0.00
Uniform Delay (d), s/veh	14.4	0.0	14.3				0.0	11.7	0.0	0.0	16.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	2.6				0.0	2.6	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	6.0				0.0	8.1	0.0	0.0	4.8	0.0
LnGrp Delay(d),s/veh	15.7	0.0	16.9				0.0	14.3	0.0	0.0	16.5	0.0
LnGrp LOS	B		B					B			B	
Approach Vol, veh/h		1458						1877			1051	
Approach Delay, s/veh		16.0						14.3			16.5	
Approach LOS		B						B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		36.0		24.0		36.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		25.0		27.0		25.0		
Max Q Clear Time (g_c+I1), s		18.4		15.2		11.9		
Green Ext Time (p_c), s		6.3		4.8		11.9		

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰↱	↱		↑↑↑			↑↑↑	
Volume (veh/h)	0	0	0	626	0	905	0	1859	0	0	1503	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				186.3	186.3	186.3	0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h				417	0	1129	0	1859	0	0	1503	0
Adj No. of Lanes				1	0	2	0	3	0	0	3	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				2	2	2	0	2	0	0	2	0
Cap, veh/h				732	0	1306	0	2285	0	0	2285	0
Arrive On Green				0.41	0.00	0.41	0.00	0.60	0.00	0.00	0.45	0.00
Sat Flow, veh/h				1774	0	3167	0	5421	0	0	5421	0
Grp Volume(v), veh/h				417	0	1129	0	1859	0	0	1503	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	0	0	1695	0
Q Serve(g_s), s				10.4	0.0	18.8	0.0	16.6	0.0	0.0	13.4	0.0
Cycle Q Clear(g_c), s				10.4	0.0	18.8	0.0	16.6	0.0	0.0	13.4	0.0
Prop In Lane				1.00		1.00	0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				732	0	1306	0	2285	0	0	2285	0
V/C Ratio(X)				0.57	0.00	0.86	0.00	0.81	0.00	0.00	0.66	0.00
Avail Cap(c_a), veh/h				797	0	1423	0	2285	0	0	2285	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.25	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				13.1	0.0	15.5	0.0	9.7	0.0	0.0	12.5	0.0
Incr Delay (d2), s/veh				0.8	0.0	5.5	0.0	0.9	0.0	0.0	1.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.3	0.0	9.1	0.0	7.7	0.0	0.0	6.4	0.0
LnGrp Delay(d),s/veh				13.9	0.0	21.0	0.0	10.6	0.0	0.0	14.0	0.0
LnGrp LOS				B		C		B			B	
Approach Vol, veh/h					1546			1859			1503	
Approach Delay, s/veh					19.1			10.6			14.0	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		32.1				32.1		27.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		26.0				26.0		26.0
Max Q Clear Time (g_c+I1), s		18.6				15.4		20.8
Green Ext Time (p_c), s		7.2				10.1		3.0

Intersection Summary		
HCM 2010 Ctrl Delay		14.3
HCM 2010 LOS		B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	744	0	1485	0	0	0	0	2136	0	0	2204	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	186.3	186.3	186.3				0.0	186.3	0.0	0.0	186.3	0.0
Adj Flow Rate, veh/h	496	0	1751				0	2136	0	0	2204	0
Adj No. of Lanes	1	0	2				0	3	0	0	3	0
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2				0	2	0	0	2	0
Cap, veh/h	887	0	1583				0	2204	0	0	2204	0
Arrive On Green	0.50	0.00	0.50				0.00	0.43	0.00	0.00	0.87	0.00
Sat Flow, veh/h	1774	0	3167				0	5421	0	0	5421	0
Grp Volume(v), veh/h	496	0	1751				0	2136	0	0	2204	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1695	0
Q Serve(g_s), s	23.3	0.0	60.0				0.0	49.2	0.0	0.0	52.0	0.0
Cycle Q Clear(g_c), s	23.3	0.0	60.0				0.0	49.2	0.0	0.0	52.0	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h	887	0	1583				0	2204	0	0	2204	0
V/C Ratio(X)	0.56	0.00	1.11				0.00	0.97	0.00	0.00	1.00	0.00
Avail Cap(c_a), veh/h	887	0	1583				0	2204	0	0	2204	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	0.68	0.00
Uniform Delay (d), s/veh	20.8	0.0	30.0				0.0	33.2	0.0	0.0	8.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	57.5				0.0	13.2	0.0	0.0	15.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	0.0	38.6				0.0	25.6	0.0	0.0	24.9	0.0
LnGrp Delay(d),s/veh	21.6	0.0	87.5				0.0	46.4	0.0	0.0	23.8	0.0
LnGrp LOS	C		F					D			F	
Approach Vol, veh/h		2247						2136			2204	
Approach Delay, s/veh		73.0						46.4			23.8	
Approach LOS		E						D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		56.0		64.0		56.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		52.0		60.0		52.0		
Max Q Clear Time (g_c+I1), s		51.2		62.0		54.0		
Green Ext Time (p_c), s		0.7		0.0		0.0		

Intersection Summary		
HCM 2010 Ctrl Delay		47.9
HCM 2010 LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Appendix G –
Public Hearing Transcript – January 16, 2014

PUBLIC HEARING RE ESPERANZA HILLS

TRAVIS RANCH SCHOOL, YORBA LINDA, CALIFORNIA

THURSDAY, JANUARY 16, 2014, AT 6:32 P.M.

Public Hearing Reported by:
Loretta E. Epperson, RPR,
CSR No. 8161

♀

MEDIATING THE HEARING:

Meg McCarthy-Waters

PRESENT FROM THE DEVELOPER:

Doug Wymore
Gary Lamb
Mike Huff
Keil Maberry
Tony Bomkamp
Ken Crawford
Jeff Hull

ATTACHED HERETO: In a separate envelope are all the cards filled out at the meeting by those who spoke, or who wanted to speak and then later declined, or who were not available when their turn was indicated.
The last two speakers, Danny Paul and Beth Stolen (name spelled phonetically), did not fill out cards.

SPEAKERS IN ORDER:

4

♀

SPEAKERS IN ORDER:
(Continued)

-- PUBLIC HEARING RE ESPERANZA HILLS --
-- TRAVIS RANCH SCHOOL, YORBA LINDA, CALIFORNIA --
-- JANUARY 16, 2014 --
-- 6:32 P.M. --

* * * *

MS. McCARTHY-WATERS: Good evening, everybody and thank you for attending tonight. My name is Meg Waters and I am going to be moderating this evening. Let me get out of that light there.

We are happy that you decided to attend. This is the second developer presentation on the Esperanza Hills project.

This is not a county-sponsored informational meeting. This is strictly sponsored by the developer. No decisions will be made tonight.

But for your convenience we have brought in a court reporter tonight so that she can take down any of your questions and they will be included in the environmental review process and we also have a videographer here who will be helping along in that process.

Because the questions presented tonight will be part of the official record, we want to make sure that everybody has a chance to ask their questions and more importantly get their questions answered and we want to make sure that the court reporter as well as the videographer are able to hear what the questions are.

So we ask your patience and professionalism and most of all courtesy as we go through the process tonight.

Hopefully, you've had a chance to look at the draft environmental impact report. If you haven't, it's available online at the County Planning Services website. And if you're a very fast reader, you can skim through all seven volumes that are at a table back here tonight.

If you have any specific questions about how the EIR is put together, I'm sure that the representatives from, let's see, California -- CAA Planning of Aliso Viejo. They are the ones that actually wrote and prepared the environmental impact report and they're back there tonight and can also answer some questions for you.

Tonight Doug Wymore, who is the developer, is going to go through -- he's going to begin by going through the whole project and give you an overview of what we are talking about here. That will be followed by Michael Huff, who is our consultant with Dudek Fire Protection & Urban Forestry. And he will present the fire protection plan which I'm sure given today's news you're all especially curious about what that would be.

The question and answer period will come afterwards. And in order to make it fair and as inclusive as possible, we're asking you to fill out a card so that we can call you in the order that we received it. And that way you don't have to form a long line and everybody has to stand through all the questions.

I'll be calling your names. If you do fill out a card, put it face down here and then I can pick it up and we'll have it right in the order. If you want to wait awhile and see what questions come to mind, you can do that or you can put your name in now and it'll probably come up sooner in the process. It's up to you.

You'll have three minutes to ask your questions and I suggest that you try to get your question well formed in your mind so that they can answer it as clearly as possible. Doug will either answer the question himself or direct it to one of our other technical experts here on the panel.

But we more than anything else we really want to make sure that your questions get answered tonight.

I am going to talk a little bit briefly about the California Environmental Quality Act and the CEQA process. Some of you may be very familiar with it, others might not.

CEQA is a California law that was passed over 40 years ago to help decision makers understand the environmental impacts of a project and the mitigation measures that are involved with that project.

CEQA produces a document, which is called an environmental impact report or an EIR for short. And what we're talking about tonight is the draft environmental impact report. So some people will refer to it as a DEIR or an EIR, but basically that is the document we're referring to this evening.

It considers the environmental impacts only; things like traffic, habitat, water, air quality, that sort of thing. An EIR does not consider other very important factors in a project which might be issues such as the economics of the project, job creation, market forces, housing demand, or financing. So those things are not a part because as the name implies it's an environmental impact report.

The EIR does not in itself approve or disprove a project. And this is really important to understand. The EIR is essentially a neutral project. It looks at all of the impacts in a very neutral way. It's used primarily by decision makers to disclose and that's what is the most important function of an EIR is to disclose and to also put into context the impacts of a project by comparing it to other alternatives.

And when you talk to the ladies from CAA back there, they'll explain to you what the other alternatives are so far and that gives you sort of an order of magnitude, a way to put the project into perspective as to what could be there in other circumstances.

So with that where we are this slide shows us where we are in the CEQA process today. That little red dot we have prepared the draft environmental impact report. The lead agency, which is the county, not the developer, has put out a notice of completion of the EIR. I'm sorry this microphone is going on and off.

Are you all hearing me okay?

So now we are in the public process, public review process, and that's why we're having this meeting here because it is a complex and a very involved document and so to assist you in reviewing it we're holding these meetings so that you have a chance to get your questions out and have a plain language explanation of what the EIR is about and we'll take it from there.

The next step would be the lead agency or the county in this case reviews all of the questions that you submit and a final document is prepared.

So thank you very much for your patience and your courtesy and we'll get started.

I'll turn it over to Doug now.

MR. WYMORE: We had our initial public outreach on August 23rd, 2012. There were a lot of you in the room at the time and when we had that outreach, a lot of you told us you need to worry about evacuation, you need to worry about fire, you need to worry about traffic, you need to worry about these other things. So we took notes on that.

And then after that particular meeting, I had a group of people come up to me and say, you know what, this fire was terrifying, it was terrible, nothing was done. We don't believe OCFA. We don't believe these other people. We don't think anybody did anything. And you're going to have to go find that out because if you don't find that out, your project is going to fail. So it was very blank, very stark, very revealing.

What we did is we went through then from there and we tried to go through and find out exactly what did happen.

So to start the meeting most of you already know where the project is but for those of you that don't, we basically sit in an unincorporated area of Orange County. It sits to the east of San Antonio and then to the north of Stonehaven and Via del Agua.

Next slide.

So what I'm trying to do in this meeting is I have some goals. All right. So I want to provide an overview of where the Esperanza Hills project is in the CEQA process. The county has issued the draft EIR, they've done the notice of availability. You guys now get a chance to comment on that.

When you do any comments, you can do them written, and we have the sheets back there, you can shoot them in by e-mail, we have a court reporter here and we're going to prepare a transcript. And that transcript will be forwarded to the county at the end of the meeting and every comment that you give will be forwarded to the county in that transcript. We also have a videotape going that we're going to send over to the county so that they can see what happened at the meeting.

So if you want to get up -- and we've given three-minute limits because there are so many of you and we don't know how many want to talk, but we want to give everybody a chance to make a comment. You can come up and ask questions. We'll answer them. Or you can just come up and make a comment as to what you like or don't like and sit down and nobody will bother you, but at least that way you get it on the record.

The other thing that we wanted to do about this process is there's seven volumes back there that you see that was part of the draft EIR and those were all compiled after we spent a lot of time and a lot of work and Gary Lamb, who is sitting up here, is my partner who was the architect that designed it.

And next to him is Mike Huff, who is with Dudek, who prepared a fire protection report for us and he'll give you presentation. Tony Bomkamp is our traffic engineer -- I'm sorry. Keil Maberry is our traffic engineer. Sitting next to him is Tony Bomkamp, who is our biologist who is also working with the Corp of Engineers.

Ken Crawford is the civil engineer sitting to his immediate left. Shawna Schaffner is with CAA Planning, who is the lady, and her organization that helped us prepare the EIR. Jeff Hull is the geologist that went out on site and oversaw all of the borings and the half mile of trenching that we did out there to locate the Whittier fault.

You don't have to direct your questions to me. You can direct your questions to any of them on any of the technical issues or you can just find out where the information sits in the EIR.

Now a lot of you did do comments on our NOP scoping and for those of you that did we tried to send CDs out with EIR in the mail. So many of you have received that. I've also received e-mails from people wanting CDs and I tried to mail those out.

The purpose of all this is to make this a document that has full disclosure and has your involvement in it. So the purpose of the meeting is to get you to talk; whether you like it, don't like it, hate it. It doesn't matter. We want your comments. We want your concerns.

And if you get those comments on the record, then the county will go through and they will look at them and then we will sit down and say, okay, does this document need to be changed, drafted, does it have everything within it, and then the decision makers can go on.

The goal of this meeting particularly for us is to describe the Freeway Fire after action reports that were authored by the various agencies because we went through and we found them and we talked to those agencies.

We'll also show you the fire safety considerations we incorporated into this. Because after we talked to all of the various firefighters and all of the others, we designed some safety considerations into it both for biology and other things to provide some firebreaks and some other things. And we'll show those to you.

We had traffic control evacuation issues and so what we did was we went and talked to the city about it and with the Orange County Sheriff's Department coming in.

What happened was after our initial April 2012 public outreach meeting, the city passed a resolution, I think it was September of 2012, to have an evacuation plan drafted. There wasn't one in place prior to that time. And there wasn't one in place during the 2008 Freeway Fire.

With Orange County Sheriff's Department coming in, Lieutenant Bob Wren then went in and drafted an evacuation plan which was given to the public at a meeting at Yorba Linda Community Center a couple three months ago, but the plan needed a little bit of explaining because he showed it to you on a map and it was in vector things. So we'll show you that and we'll break it down a little bit and show you how it affects this area.

We had a lot of questions about traffic capacities on San Antonio, Stonehaven, and Via del Agua. And in the recent Cielo Vista meeting that I attended those questions were possessed but there were no answers.

We have capacities that we outlined and we'll show you those in here and we'll show you how our project would also change and also other projects would change them.

We'll provide answers to any other questions you have, but in particular water storage, density, the geotechnical considerations.

And then you'll have an opportunity to do anything else.

Next slide, please.

Where we are in the CEQA process as Meg showed you is basically we're at the point where the draft EIR has been circulated it's open for comment. The comments are going to come in. The final timeline is February 3rd.

Once February 3rd roles around and we get a chance to review all those comments, we're going to respond to all those comments. So every comment that comes in will be responded to. If there's a lot of comments that say the same thing, then they'll be responded to in bulk.

Then we'll sit down with county and there will be a decision made as to whether or not the EIR with response to comments is adequate, whether it needs to be recirculated, changed, and so on.

Next slide, please.

The after incident reports that we found were one from the City of Brea Police Department. That's available on I believe the Yorba Linda City website.

The OCFA report and the presentations that were done after that and that's available on the OCFA website. OCFA is Orange County Fire Authority.

And then there's the Yorba Linda Water District who also did an after action report and it was available on their website. I couldn't get it the other day so I'm not sure if they're reactivating that or not.

We also attended meetings after we reviewed those reports with OCFA, both on site and off site, multiple meetings. We attended meetings with the City of Yorba Linda. We attended meetings with the Yorba Linda Water District. And we attended meetings with the Chino Hills State Park.

I don't know if you guys remember but at our original August outreach meeting Ron Krueper from the State Parks stood up and said have you looked at our manual for our park and have you read this and you're right next to the park, you need to review all this information.

We reviewed all that information. Then we met with him two or three times. And in particular one particular provision in there was on the fire management plan.

There was -- this was an older document. It had a section on fire management plan and what they were going to do about it. It hadn't been finalized. It hadn't been drafted. Then they drafted it. Then they didn't send it to me. Then they quit meeting with me.

I will absolutely tell you as we sit here they have no fire management plan. The fire management plan for the park as I understand it today is that it's going to burn when the fire hits.

We reviewed the fire history that was done. Hills for Everyone, which is an entity that we've met with a couple of times, prepared a fire study and forwarded it to the Yorba Linda and I think made a presentation to the council. We met with them. They reviewed -- we reviewed their study.

Mike Huff came up with a study of his own. They had a fire on their study that we didn't have because theirs came back and got it from a different database. So we went back through and pulled that one up and we looked at that history of fires.

In general terms I will tell you that what's happened is in this particular area since 1876 there have been three fires. There was one in 1943 that we didn't pick up. There was one in 1980 called the Owl Fire. There was one in 2008, which is the Freeway Complex Fire. All three of those fires burned through this area.

And what's happening in the park as we talk to the park and what's happening throughout the Chino Hills State Park is the vegetation has changed. It used to be where fires would go through and be devastating fires every 50 or 60 years or so.

You can see the cycle is cut down and what's happened is non native vegetation has gone in and has the non native vegetation gets in, you end up with brush. So your fires aren't going to be as big but they're going to be easier to start and particularly near the roadways. And that's exactly what's happened. You're starting to have a bunch of smaller fires near the roadways around Chino Hills State Park.

It was important for us to learn what was going on in Chino Hills State Park, what was causing fires, and what caused the fires here. That's why we retained Dudek Urban Forestry to go through once we came up with a design and tell us whether that design was any good or not.

Along the way we went and talked to OCFA's weeds and seeds guys, their wild wind specialist, George Ewan. And he indicated that years ago he had talked to the park biologist about this very problem and they thought about needing firebreaks to protect people that were on the edge.

So we thought it would be a good idea to put a firebreak under the Southern California Edison wires since that was an easement on our property and that we would be able to break it from there. That's not going to work. We've been out to the site. So we redesigned it and I'll show you that as we keep going.

And finally we talked to neighbors,

firefighters, the sheriffs, and a lot of people that were on site at the day. Lieutenant Bob Wren was out on site that particular day. A lot of the neighbors that showed up at the August meeting have come up and talked to me. Some of them have yelled at me. But at the end of the day everybody's described what their experience was and what happened out there.

And we've also gone through and looked at all the videos and saw what happened. And we've also looked at other fires to see what their characteristics are to see what we could do aside from the things that I talked to you about in the initial meeting, which is putting up a development that had hardened homes and so on and so forth.

Next slide.

All right. So these were what we learned and basically some of this I've already told you, but Brea Police Department was unable to get control of any of the intersections. There was absolutely no evacuation plan.

And so when things started coming through and they dumped traffic off the freeways on the 91 and the 57, it backed up Yorba Linda. So when you folks couldn't get out of your neighborhood, it wasn't a function of the streets particularly in your neighborhood or how many of you were trying to get out of your neighborhood. It was a function that you had nowhere to go.

Everybody was coming in and that's one of the things in my talks with Lieutenant Wren that he keeps emphasizing to me. Your development can be evacuated. These other neighborhoods can be evacuated. But you could put in an eight-lane highway and it isn't going to help anybody.

I need to get a traffic control evacuation plan that is going to work for the entire town. I need to control things on Yorba Linda, La Palma, Esperanza. I need to make sure that if somebody comes off the freeway and they're headed down La Palma or down Esperanza instead of balling up and Yorba Linda Boulevard.

And further I want to get the people out of the neighborhood where the fire is so I am going to take them -- I'm going to take them across Yorba Linda and into the neighborhoods so they can disperse out that way so I don't have the bottlenecks.

Because as he has explained to me four times now in each meeting I've had with him, both on site and off site, it's not all about this particular area. It's about the whole picture and that's what you need to do. And as he explained earlier -- and I'll show you -- he needs to get people out there to control the intersections.

Alert OC, which is in existence now which calls for people and as to when they're going to go ahead and evacuate was not in existence in Yorba Linda at the time. It had been adopted earlier in 2008 in Orange County. It had not been adopted in Yorba Linda.

The fuel was great because this was the first fire that hit in 28 years. And I'm sure a lot of you know in Blue Mud Canyon we have big black walnut trees and we had an abundance of things that have since burned and the canopy was pretty good. Those things are gone. And typically what would happen then is over the next 50 or 60 years things would come back.

Those of you that live close to it can see that non natives are coming in and coming back, but the walnut trees themselves are showing very little growth at least in that particular area. In other areas of the park I think they're sprouting.

Another big problem was the water booster pump failed. I know a lot of you have heard about this, but basically there was a water booster pump that was sitting over at Santiago, I believe, which is a reservoir that sits between Hidden Hills and this particular area.

When that booster pump failed due to the fire, then it caused other pressure problems in lots of other locations. And so consequently there was no water here to fight the fires, which is why you had a staging area down at the park but no firemen up here to be able to fight anything because they just didn't have the tools to do it.

The other thing we learned is that a majority of the houses that were burned or damaged were from ember fires. On the OCFA website and in that report you will see that most of the homes in Yorba Linda that were damaged were not on the edge of the fire. They were on the other side of San Antonio headed directly west from Blue Mud Canyon. And there were more of those burned. And it wasn't from direct radiant heat. It was from ember fires.

And what we've learned is that they were built prior to 1995. And because they were built prior to 1995, they were built to different standards and those standards are -- don't provide for sealed eaves and so on and so forth. So consequently those houses are much more susceptible to fires.

We also learned that the Casino Ridge subdivision built in 2004, which was built to a higher

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standard because the City of Yorba Linda kicked into gear I think sometime after 1996 and enforced new regulations, those houses didn't have any houses lost. And also in the Freeway Fire no houses built after the 1996 code were lost anywhere in the county.

Next slide.

Okay. So what's happened is the Yorba Linda City Council adopted OC Alert. I told you about that. It required that residential construction standards for homes to be repaired and new homes were to be built to higher standards. Also, all of the homes that were damaged by the fire had to be built to the higher standards.

In addition since that time, OCFA completed their after action reports and their presentation and they had multiple recommendations. Mike can probably cover some of those that I don't, but they have early alert and what they also did was had areas where they had issues where there was overlapping fire responsibility and those caused issues because at the time the Freeway Fire broke out a lot of equipment from OCFA and the other firefighting authorities were elsewhere because there were already two fires that were burning elsewhere in California. So they didn't have a full complement of equipment.

They've since changed their mix of equipment and they've also gone through and done more coordination between themselves and they're going to have more of what they call emergency operation centers.

The State Fire Marshall developed standards for ignition resistant buildings, which is basically hardened homes. And those were adopted for very higher fire hazard severity zones. This was not designated as a very high hazard zone at the time by the State Fire Marshall because the maps hadn't come out yet.

But the City of Yorba Linda had designated it as a zone with increased yield. So now those 2010 standards have been put in. And, in fact, they put them in since then. I think we even are up another one.

And then Yorba Linda Water District completed the Hidden Hills Reservoir and made a lot of other operational changes, which I'll show you. But basically they were plagued by pressure problems in addition to the pump that failed and Hidden Hills ran out of water.

By the time the fire was up to it, there was very little that could be done for some of those homes. The Hidden Hills Reservoir is three million gallons.

It's over capacity basically.

And that's one of the reservoirs that we originally thought because it was so over capacity we could draw water from. As I'll show you later, Yorba Linda Water District decided not to allow us to draw water from the east for the same reason that we had the failure here and it has decided we need to draw it from the west.

And then the Orange County Sheriff's Department designed the traffic control plan in 2013.

And then OCFA adopted the Ready Set Go program for neighborhood emergency areas.

When we were going through and talking to OCFA in one of our several meetings with them, they said, look, we have a Ready Set Go program that we're trying to promote. It's a state program. And it's basically trying to educate people and get them once a year to understand what they need to do to evacuate, why they need to evacuate, what they need to do when they evacuate, and so on and so forth.

And also to kind of practice it and have some familiarity with where they're going particularly if they live in a very high fire hazard zone.

They said would you join with us and put into your community the Ready Set Go program. It's designed for existing subdivisions. We would like to you put it into ours.

And we said we would. Which means that the HOA is going to have its own alert program. It's going to have its own program where it conducts training once a year and it has people coming in.

And as you'll see later, there's going to be fuel modification putting in which the HOA will have monitored by an independent audit once a year and it will be maintaining those fuel mods.

That's important because most of the communities around us and most of the communities in Yorba Linda don't have HOAs and so consequently fuel modification that comes out of a house has to come from individual owners and it's a whole lot tougher to place hundreds of individual owners than it is one big HOA.

Next slide, please.

This is a slide from the OCFA presentation or the after action report. And the -- this is the lessons that they show. It jives with everything that we learned, which is basically the ember intrusion was the biggest problem, water supply challenges was the second biggest problem, coordination, EOC stands for emergency operation center, mass notifications, because those didn't work during the Freeway Fire, and then the repopulation of residents is deciding when people can come back in and what steps need to be taken then.

Next slide, please.

They decided that on their mitigation and preparation that there needed to be some permanent measures put in please. I put the circles around these. And that's defensible space and construction features. We've designed both of those into our project.

Next slide, please.

Defensible space that they're talking becoming is basically fuel modification. As you can see on this slide, this is an example of what it looks like.

Fuel modification that they're talking about is basically 170 foot zone. There's a 20 foot zone that's on your property that's supposed to be level. Then there's a 50 foot zone that comes off of that that generally will be irrigated, but have fewer plants on it. And then another 50 foot zone that may not have to be irrigated but will have fewer plants. And then another 50 foot zone.

So basically it's a gradual thing coming up and the reason that they picked an uphill deal is because that's when the fire hits the greatest. It likes to travel up hill.

Next.

Here is our problem. If you look at our property and you look at what happened during the Freeway Fire and you look at where the houses burned, then you see that there's a plume that went down Blue Mud Canyon and it went across San Antonio. Yes, it burned some houses on San Antonio. It burned houses on Durango. It burned some houses on Stonehaven.

But it burned a lot more houses on the other side of San Antonio. And that's because it shot the ember zone up. If you want to see a picture of what those houses looked like or which houses were damaged, OCFA has it on its website.

And when we went through this and we went through it on a couple of windy days what we learned is -- this is Hidden Hills that we're looking at and this comes down looking towards us. This thing becomes a wind funnel. Blue Mud Canyon becomes a wind funnel.

So if you've got 40 miles an hour winds, they become concentrated and they sweep through there. There's not a lot of vegetation in there now because it got burned out before. But if you go through there and you walk through there and you look at the slides or if you look at the vegetation on each side, you'll see how the vegetation in the park has become something where it's not native grasses, the type of thing that will pick up quickly in a brush fire.

It won't be as devastating as the type of fire we had during the Freeway Fire because there wasn't as much vegetation, but eventually as it grows up, you're going to have the same problem again. So from our perspective that was our number one problem once we understood it. That's what we needed to do something about.

Next slide, please.

So basically what we did was we went through and looked at the standards for hardened homes and we adopted all those standards for hardened homes and then we went one step further. They require sprinklers in the homes, but they don't require sprinklers in the attic for some reason.

My partner is from Arizona. He's an architect. He put sprinklers in the attic. So we've gone one step above everything else so that there's sprinklers in the attics of these homes.

In addition, these red lines, orange, and blue lines are all of our fuel mod from the 150 feet that goes around it and the little blue line is the zone A.

What we have done in particular here is -- this is Blue Mud Canyon and we've taken Blue Mud Canyon and we're going to make it into a mitigation area.

And the reason we need a mitigation area is because there's a little bird called Least Bell's Vireo. Least Bell's Vireo is a federally-protected bird and it has nesting locations apparently on the Cielo Vista property.

If we get one of our access roads across the Cielo Vista property, then we're going to have some of the potential habitat for the Least Bell's Vireo that we'll need to mitigate.

So we've established a mitigation zone all the way through Blue Mud Canyon where we're going to irrigate and we're going to remove a lot of plants and we're going to put in what we call California friendly plants.

The California friendly are about a 70 percent native, 30 percent exotic mix. And they have year-round color. They're more fire resistant. They're more water use. We'll put them more sparse because we're also going to put a trail system down in there.

And then in Blue Mud Canyon itself we'll irrigate that and have that to where we'll have willows, we'll restore the walnuts, and so on and so forth. So irrigated plants as Mike will tell is going to go a long way towards stopping fires as it comes in, but it isn't going to be enough.

So what we did also in addition to doing a fuel mod zone that's going to cover the entire bottom is we have a 300 foot swath and it's in an area where we can reach it from both sides with paved roads and we're going to make that area more sparse and more fire resistant so it will form a break for the fires as they come in.

So this should protect all of the neighbors that currently are in there and it should help with the direct radiant heat fires that come through. There's still going to be ember storms that are coming from the other places and the only thing that's going to stop your houses from burning from an ember storm whether it's coming from a fire two miles away or not is for you to take some steps to harden your home as well.

Next slide.

This is another option. It's option 2B, which is going out -- one of the exits going out and I'll cover that later -- to San Antonio and then the secondary exit going down to Stonehaven.

Oh by the way, on ours the other thing that we're putting in is we're putting in two reservoirs. There's a reservoir that is at the top where that little blue line with the white dot is and then this one right here (indicating). The reservoirs are located at the 1200 foot and 1390 foot elevations. And we're working with Yorba Linda Water District to decide exactly where to put them and how much to put them on.

Those particular water tanks under the Northeast Area Planning Study that Yorba Linda Water District adopted in March will provide the water for not only our project, but if we can make deals with the other developers and they play nice with us for also the other projects in the area.

So those would also allow the Yorba Linda Water District to put more water in this site and right now we'll show you some slides later, but it'll fill a gap in their system.

In addition to that, they have designed eight booster pumps which will go over by the Fairmont Reservoir. And the purpose for that is so they can mix groundwater with the water coming out of there and also have redundant systems.

Because one of the things that they've done since the Freeway Fire and is gone through and tried to get redundancy in their system so that if one system

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fails, the other will pick it up so that they don't have a repeat of anything that's gone on.

Next slide, please.

So our fuel mod is going to have the irrigated area. It'll establish the modification zone. It'll put a firebreak zone through Blue Mud Canyon. We'll be removing non native fire friendly plants and we'll establish fuel modification zones to be maintained by the HOA in accordance with OCFA standards.

Next slide, please.

The firefighting design features that we've got up here is that when we bent to the OCFA and we talked to them. They also wanted us to design some staging areas in there.

So we've got staging areas that are going to be designed on site. Two of the staging areas will provide for five fire trucks and they'll be fed by direct hydrants. So they'll be able to fuel up quickly and then go out and fight whatever they need to do. In a wildfire area they don't stay in a static location.

And then the third one will be at the bottom of Blue Mud Canyon and that's going to provide for two engines. The Blue Mud Canyon staging area if there's a big fire coming through won't be used obviously because it would be too dangerous, but if it's a grass fire or something like that, they'll be able to get in. So before they didn't have any firefighting areas in there. Now they're going to have them.

The reservoirs I've already told you about and that's going to provide over a million gallons of water storage.

And then the roads are going to be constructed for emergency ingress and egress simultaneously so that you'll be able to get vehicles out and you'll be able to get vehicles in at the same time.

Right now the only way they can get in there is the dirt roads that are maintained by OCFA once a year and graded in connection with easements owned by Southern Cal Edison.

As I told you, all the homes will be built to the latest hardened home requirements with sprinklers. We'll adopt the Ready Set Go program and will maintain an imagine alert system in addition.

Next slide.

This is the result. Mr. Huff will get up here and he'll show you what happens, but the slide on the left is where the fire would be and what would happen according to his computer software if nothing goes on our site. The slide on the right is exactly what it's going to look like if our project goes on the site. It becomes a very huge firebreak for you on the existing neighborhood and it will provide you with more protection by putting you away from the fire and providing breaks there.

Next slide, please.

The Yorba Linda Water District built the Hidden Hills Reservoir and did the booster upgrades. This is part of what they've done. And they've done all these other infrastructure things in addition to that to have a redundant system.

Next slide.

They've also joined the Water Emergency Response Organization of Orange County and they got a seat at the Operational Emergency Operations Centers.

Right now when there is a red flag warning that appears then what happens is Yorba Linda Water District fills reservoirs. So they make sure that they're filled to capacity. In the case of the Hidden Hills Reservoir they'll fill it up beyond what they would ever need so that they'll have extra water available.

When the 2008 Freeway Fire came through there was no reservoir at Hidden Hills. The nearest one was south down at Santiago. And that was a hole in their system that's since been repaired.

And then they've got a mitigation plan where they go through with other water utilities. Because all these utilities at some point in time have some connections. For instance, at the southern edge of our property Metropolitan Water District has a huge pipe that's going through. So now there's a lot more coordination between the water districts as to what they will do in the event of a fire.

Next slide, please.

This is just the things that they've gone through and done to overhaul their deal since the Freeway Fire. They've increased their pumps. they've added seven million gallons of storage. If we go through and complete this, that will become eight million gallons of storage.

Next slide, please.

This is basically where we are (indicating). Hidden Hills is right up here (indicating). That wasn't built before. Santiago is down here and then our property is right here (indicating).

So as you can see the next reservoir that really could serve anything is what they call a Little Canyon Reservoir which is that one at the 1000 foot level. So there's a hole in their system right now.

And if we put our underground reservoirs in there that fills that hole and also gives them redundancy so that they can go through to the Fairmont pumpouts over here to the left, which are in green, increase those and then they're going to run pipes up to Little Canyon to run down here.

Right now the Yorba Linda Water District has no excess storage capacity to serve any of these developments so it has to be built on site.

In order for it to serve the existing developments like the planned Cielo Vista, Bridal Hills if anything ever goes up there, and ours, you have to have elevation. I'm a layman, but basically you need to have about 130 feet above the maximum height of your highest pad.

So that would mean that we need something along the 1200 foot level, which we have designed, and the 1390 foot level. There's insufficient elevation on Sage to put anything in there. And for other reasons there's insufficient engineering and so on and so forth without a lot of construction cost to put it on Bridal Hills. So it pretty much has to come on our property.

We spent an awful lot of money with our engineers talking to Yorba Linda Water District, talking to their engineers, designing things back and forth. And the design we came up with was to run pipes over from Hidden Hills to reservoirs on our site.

They did the Northeast Area Planning Study, which they dropped adopted in March 2013, and they said we won't run water over from Hidden Hills. We know we've talked about it. It's not happening.

I sat down with them and said why and they said because again, Doug, that's going to create a single point of failure. We won't do it again. And that's why they're running everything from the west.

Next slide.

So what we'll have on site is the 1200 and the 1390 reservoirs and they've got 1.3 million gallon zone. That would be enough to go through and serve both us and Sage. And if we need to do more than that for any other reasons that they come up with, we would be willing to do that as long as we can get agreements with the surrounding developers.

And then they would be serving it from Little Canyon. So they would bring pipes from Little Canyon over and then bring it in there so that they keep the head pressure because that's from the 1000 foot elevation.

Next slide.

Basically the two blue dots are where on the property the underground reservoirs will be. You won't be able to see them because they're underground. They won't agree to anything above ground. So they're going to be flat pads as far as you can tell.

And then this is an engineering diagram that shows you basically the water pressures. Our civil engineers are here. If you have specific questions about water pressure, we've already gotten a couple people talking about them, and they can answer those questions.

Next slide.

This is the Yorba Linda Traffic Control Map for Evacuation and this is what Lieutenant Wren showed people, but in just looking at this map you can't tell very much unless you zone in it on it.

Next slide.

So that's what we did. We took it and we took it in four different sections so we could see exactly what he was talking about.

Next slide.

This is the first section and what he is showing here is the direction that he's going to have the traffic going. So he's going to have deputies at each one of these intersections and they're going to

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capture the intersection, they're not going to allow traffic to come in, and they're going to set traffic going in whatever specific direction they plan on going. These are planning on going away from potential fires.

However, since he's going to have radio control with these guys, he's going to put the people going in whichever direction he needs to make them go and it's a fluid deal.

So, for instance, if you hit something even in this particular area where you decide, wait a minute, we want to go down San Antonio out to Yorba Linda, they may turn you around go down to Fairmont or they may have you going right on Yorba Linda, they may have you going left on Yorba Linda, or they may have you going down Yorba Linda for a very short way and dump you into neighborhoods.

What he's not going to allow is the bottlenecks that occurred before. The guy is experienced. I've talked to him. He's done in this Laguna and he's done it in a lot of other locations.

And he was here during the Freeway Fire and saw what happened with Brea. He told me candidly what happens is if you can't control the intersections, then you can't control anything. And nothing was controlled. There was no plan. And as a result, nothing was controlled and that's why the traffic backups occurred.

Next.

This is another section that's closer to us. You'll see that the property we have is in the upper-right corner. So he's bringing people down San Antonio, but then as they come onto Yorba Linda, he's putting them down Fairmont or Las Palomas.

He also told me that when Hidden Hills is evacuated, it's going to be evacuated and it will keep going straight on west onto Esperanza. He's not going to allow them to go up into Yorba Linda.

Next.

Same thing as you get further to the eastern part of the town, he's showing that he's going to keep the traffic on La Palma and take it on out away from the fire areas.

Next.

FROM THE AUDIENCE: Can I ask a question?

MR. WYMORE: At the end of the thing you can.

So the next thing that OCFA asked us was whether or not we would design an evacuation program for ours and so we did. Gary went back and did an evacuation plan for our particular subdivision.

And what that showed us was that we had to go in and we had to put in some additional roads and -- which we've done, and then we put that evacuation plan in as part of our deal. And that evacuation plan depending on the exit will have a secondary access that's 28 feet paved which is their minimum standards for an emergency exit. If we end up with option 2B, we'll have two secondary -- we'll have two main exits coming down.

Next.

This happens to be the one 2B. This is one of our access options where one of our main roads would go out to San Antonio below everything and then the other one would go down to Stonehaven on a secondary basis.

Next.

As part of the EIR process we have to prepare a traffic study and everybody has asked me about traffic. Our traffic study scope wasn't just the streets on our area.

When we went to the county, the county told us that to do your scope you need to go to the City of Yorba Linda because they know the roads better and they will tell you what the intersections are and where the areas are that you need to study.

So this scooping study shows what they told us to do. Everything that is on there that's a little white dot is something that Keil Maberry studied. Because the mitigation doesn't just occur at Via del Agua or Stonehaven and Yorba Linda. They made us go through and check traffic all along that particular area.

And as a result one of the mitigations is to contribute to I believe it's a right-hand turn lane down near Savvy Ranch and some other items which Keil can explain to you.

But the point is this wasn't something that we came up with that we decided the scope on. This is the something the county and city decided the scope on and that's why our study is so thick and each one of those access options that we're studying are in there. So it isn't something where we're just looking at one little area. We're looking at the entire thing they told us to study.

Next slide, please.

The two collector streets we had to establish capacities on. So we went back to the city of Yorba Linda's general plan and found how those roads compared to what they described in their deal. Because we've heard criticism that San Antonio isn't going to take on this traffic and Stonehaven and Via del Agua aren't going to take on the traffic.

What our traffic engineer did was he went in, he compared it to what he did that was in the city's general plan, and he said these are most like 12,500 vehicle per day roads. One of the roads is 40 foot wide. One is 38 foot wide.

But then when he got to Via del Agua and Stonehaven he cut that in half. And the reason he cut that in half is those although they're wider more neighborhood roads. They can't stand the traffic in his opinion. So he cut those in half and kept San Antonio the same.

Next.

In the Cielo Vista meeting people asked well, what are the capacities of the road. We had to come up with the capacities of the road and this is what we came up with. We had to show what the existing vehicles per day were on each roads. So we put traffic counters out there to find out what the existing was and it's on this chart. So Via del Agua had existing of 1112 a day. Stonehaven had 1966. And San Antonio had 3530.

Our project, which in our traffic study since we knew that Bridal Hills could eventually put in

38 lots, we increased our traffic study to 378 instead of just 340, which will account for them whether they're ever built or not.

So if you put that in there then our project will add 2351 on option 1 and then 1266. Option 1 has both our emergency exit and our primary exit coming down to Stonehaven. If we refer prefer to do is to go down on what we call option 2B.

If you look at our EIR there are four options. There's option 1, which has two roads going down through to Stonehaven which is the one that we have legal access to today.

Option 2 has our emergency going out Stonehaven and then primary going up to Aspen Drive. Nobody that we've talked to likes that option, including the guy that's shaking his head who probably lives there now.

And then option 2A goes through what is called the potential access corridor that's described in the area plan for Cielo Vista and it winds around through that canyon and then goes out to San Antonio south of all the existing homes on San Antonio.

Option 2B is an option that we designed after more consultation with various people and option 2B has our primary going in the same direction down San

Antonio and then -- and then a secondary access going down Stonehaven. And we divided up the traffic saying roughly 65 percent is going to go out San Antonio and 35 percent is going to go out Stonehaven.

At the end of the day option 1 will take the level A, which is the best level you can have for traffic, on Via del Agua and it'll turn it into a C. It won't affect the level A on any of the other streets. If we go with 2B, then all of the streets will remain level A.

Next slide.

This is how Mr. Maberry calculated the trips per day. Basically what it comes down to is each home he put in assuming that it would be 9.57 daily two trips a day. This is in the EIR, but again -- and the 378 units that you look at and you go wait a minute, those guys are telling us we're only going to put 340 in. Yes, we're going to put 340 in, but we have to account in these traffic studies for other developments.

So you'll go through the traffic study and you'll see that we have to account for developments that are happening out in eastern Yorba Linda because whatever traffic we generate has to be taken in context of whatever traffic they generate as well because this is a wider scope.

As soon as I'm done I'll take your question, sir.

FROM THE AUDIENCE: Can we have somebody earmark this slide to come back to this slide later?

MR. WYMORE: Sure.

Next slide.

The other thing we had to do that many of you noticed was we in California, if you're in an AP zone, which is an Alquist-Priolo zone, where there's an active earthquake fault, like the Whittier Fault which we have, then they establish a zone which is basically either a quarter mile from where they either know the fault is or where they project the fault is.

In this particular case the fault has never been specifically identified on this property. We needed to go through and figure out exactly not only where the fault was but also figure out whether there were any other faults, whether they're active or not, within the AP zone. So that's why we had a half mile of trenching. We also had some earthquake zones on their there which is why we've done all the boring. We also had some soils issues on there which is why we did the soil testing.

So a lot of you have seen that out there.

What we found at the end of the day was we found exactly where the Whittier Fault was. And this particular slide shows the trace and then what we did -- this shows 100 feet, but we actually decided to offset 120 feet from there. So that nothing gets built in there except roads and those roads will have to be specifically designed for the earthquake fault. So you can see there's not even a lot that has anything bordering it.

Under California law if you find a fault and it's an active fault, you can put a residence within 150 foot of the fault.

FROM THE AUDIENCE: Can you show the fault on that picture?

MR. WYMORE: This line right here (indicating).

And then the offset is as it comes up. The offset only goes to the north because we didn't establish an offset to the south because we don't have anything -- all of our lots are to the north of the fault.

Next slide.

We've been asked if the City of Yorba Linda General Plan whether we're consistent with it or not. We went through the City of Yorba Linda General Plan and basically you can look at this, but they had this property set up for 630 units, not just our property but the others as well. They had it set up for the density of one unit per acre. They had the residential use as being cluster which is what we've done. They had circulation improvements to San Antonio Road and Via del Agua or San Antonio, which is what we've done.

And then you can see there were access easements that they were going to have because they wanted to have all of the properties; Bridal Hills, Yorba Linda land, the Nicholas Long, what we currently own, the Simmons property next door, and the Cielo Vista project all designed on specific plans. Right now our project is the only one going through on specific plan.

Then they wanted to complete the equestrian trail network. As you'll see, we have trails that are going to be going through along the northern edge of Blue Mud Canyon and connecting into the Old Edison Trail and Chino Hills State Park, which is the only place the park would let us connect into.

None of the property was designated as conservation or open space. None of it was designated historic. None of it was designated as a wildlife corridor.

Next slide, please.

♀

Our density is .73 dwelling units per acre, which is under the one dwelling unit per acre. And it's going to be approximately the same density as Casino Ridge. It will be considerably less than all of the subdivisions and tracts around us.

Next.

These are basically our options.

So on option 1, which is the one we do have legal access to, we'll go down through to Stonehaven and our emergency exit will go through Cielo Vista. We have litigation going on with Cielo Vista to contest whether that easement exists or not even though it's a matter of record. And the next hearing that's set up for that I think is in March, which is our summary judgment motion.

Next.

This was the option 2 that we put in there which had our emergency access going out to Stonehaven and our primary going out to Aspen. As far as I'm aware, everybody that we've showed that to didn't like it.

I will tell you, however, I got a comment today from Bob Wren and I got one last Friday and he said, well, for emergency purposes I am going to send in a letter to the county and I am going to say that I

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want you to put an emergency road up to Aspen even if you're going to have your main one go out. He said I want -- if I can get four, I want four. If I could get five, I want five.

So basically what he's telling me after I took him out on site is he wants this one, he wants the one going up Aspen as emergency only, he wants the other one going down here, which would be 2B, and he still wants a connection going into Cielo Vista even though that's something that we wouldn't necessarily need. And he also told me today that he's probably going to comment and see what he can do about an emergency going out of Cielo Vista onto Dorinda as well.

As you would expect, he's looking for every emergency access that he can get under any set of circumstances because he wants something that if he needed to he could bring the residents from the south through this development and then out up across Fairmont if something like that became necessary. We disagree with him, but nonetheless I'm telling you that's one of the things he's going to do.

Next.

This is 2A. 2A has us with emergency only going down to Stonehaven and our primary going down to

San Antonio.

Next.

And 2B has us going with exits to both, with this being more of a private one, for residents only.

FROM THE AUDIENCE: What about for any of us?

MR. WYMORE: And that's it. I think that's the end of the slides.

No? Next.

Okay. This is our open space exhibit which basically shows that we've buffered the neighborhood from everything and in Blue Mud Canyon pulled the lots back up on the hill and then back up to the other hill. You can see how that will look because there is a study that's in the EIR that shows photographs from all the locations around this.

Next.

And this is another one which will show option 2B. This area down in 2B is because that's where we were told that many of the residents would want a park because they want a trail that would go around so that they would go up through Blue Mud Canyon and connect. So we've included a park that would be down there just south of where we exit at San Antonio.

Next.

We've got an animation that will show you what it'll look like when it's built. It will take about three minutes and then we'll be taking questions.

(Animation playing.)

MR. WYMORE: I misspoke. We're going to have Mike Huff up to give you the fire protection report.

FROM THE AUDIENCE: How long do we have this room for, till 8:30?

MR. WYMORE: Oh, no. We have this room till whenever we need this room. This isn't one of those things where we're going to put you on a deadline and kick you out.

I'm taking questions. So we'll be here.

FROM THE AUDIENCE: It's a school night. I've got kids.

MR. WYMORE: I understand.

FROM THE AUDIENCE: We've all got to go.

MR. WYMORE: All right. As soon as Mr. Huff is done, we'll be glad to answer your questions.

MR. HUFF: I won't be nearly as long as Doug was.

If you'll indulge me on the first few slides, it's a lot about me. And I'm not here to brag myself up, but I thought it was very relevant that you understand a little bit about my background and what qualifies me to be here to do what I did for this project, which was basically I was retained to come in and review the plan and the fire protection features that were being provided for the plan and compare that with projects that I've worked on.

My background. I have a background -- my education is forest management with a fire ecology focus. I've been in consulting and natural resources for 21 years, 17 of that here in Southern California doing fire protection planning for a wide variety of projects.

I'm a principal. I head up the Urban Forestry and Fire Planning Protection at a company called Dudek, which is an engineering firm.

And then I have several certifications in wildland fire ecology, forestry, and horticulture. I'm an active member of the California Fire Chiefs Association. I sit on the So Cal Wildland-Urban Interface Committee, which is a code committee that routinely meets to discuss and implement codes that eventually find their way into the California fire codes. I'm an annual trainer at the Fire Prevention Officers Institute each year.

And as I mentioned, we've done projects -- yes sir.

FROM THE AUDIENCE: Very impressed. Excellent.

My question is I guess how familiar are you with this area?

MR. HUFF: I'm getting to that.

FROM THE AUDIENCE: Okay.

MR. HUFF: And if you have questions, please wait until the end. Thank you.

We've done projects throughout Southern California and throughout the state and most of my projects are in Orange on San Diego Counties.

That is missing a slide.

But just for an example of the projects that we work on. I just finished this last year a project that was not so much fire protection related, but it was -- it included fire protection, but it also included a wildland open space area, the Nature Reserve of Orange County. It's the 36,000 acres of open space that you see across the 91 here all the way to the coast. And that open space, like any open space, including Chino Hills State Park, is being hammered by repeated fires and it's causing considerable damage to the habitat.

So what our plan focused on there was reducing the number of fires, trying to help that go back or revert to the climaxed vegetation condition, which is actually much more ignition resistant than the non native grasses that we're seeing out there now.

I've done fire protection planning for large, very large development projects like Tejon Mountain Village in Kern County. That's basically a several thousand units and 30,000 people on a 26,000 acre project site.

I've done projects in Laguna Beach routinely, almost ten a year over there for small projects. All dealing with implementation of fire protection and structures that are in high fire hazard severity zones. So it's very relevant to this project and if you have questions further about my background afterwards, I'll be happy to answer those.

When I was asked to take a look and review this project, we basically follow a standard protocol on any of our projects and it starts with implementation of kind of the latest science that's out there. And there's a lot of research going on on the wild urban interface and we try to apply that as much as we can to our projects.

We follow typical risk assessment methods. We want to learn everything we can about the fire environment that the project is sitting in.

This is an overview real quick. We look at the site risk, fire history, fuels, weather, existing fire resources for response, access, fire behavior modeling.

We conduct passive -- we're looking at the project for how passive it's protection is. We don't want a lot of systems that require human intervention. We want it to be things that can stand itself out there as did the Casino Ridge neighborhood. It didn't tie up Orange County Fire Authority resources because it could defend itself. It had a fuel mod and it had ignition resistant construction. Those are the kind of things we're looking for.

And then awareness so the community needs to be aware and it cannot just be a community that is in the wild urban interface and not realize things that its residents need to know and do on a continual basis.

We look at the fuel modification that they provided, we look at the infrastructure, and the fire protection features.

So real quickly I'll go through our process. While we're in the field on the site, we're looking at topo, veg. We're looking at wind alignments. We're looking at any unique features that might facilitate fire spread.

And this one as many of our projects we have a recent fire for which we can go back and look and make sure that what we're seeing is how the fire behaved in the -- in this case in the Freeway Complex Fire.

This is -- that was the fuel portion.

Then we get to the geographic information system portion, which is a powerful tool that we use. And this particular data is a wind data and the models will break down how the Santa Ana winds will flow through these canyons.

So on this site it's interesting that Mr. Wymore alluded to it, you actually have tunnels, wind tunnels on this project within a tunnel. So you have the 91 corridor, which funnels winds, and then you have on this site additional funnels, and it can create erratic, unpredictable winds, as you all know.

This is our vegetation component. We usually get that from the project biologist where each vegetation type is mapped and we convert those vegetation types into fuel models to run that through the fire behavior model.

We look at fire history. In this case obviously the footprints of this and the Owl Fire are fairly close. In general this site has burned twice and other areas up north are burning a lot more frequently.

This is the results of our basic fire

behavior modeling which in each of those vegetation types we run it through an algorithm and it spits out what the projected flame lengths, fire intensity. We can model the distance that embers would be thrown. All of that we can get and pretty accurate.

This is an exhibit we create that goes in then into OCFA and when they're reviewing the work and this let's them look at particular areas and see what those flames would produce.

Then we run it through a more sophisticated fire behavior model called Plan Map and that looks at the entire landscape. So we feed it the same kind of information across this landscape; the vegetation, the slope percentages, the wind alignment. And then we basically plug in what the weather is.

We can do it for a summer fire, which would be a typical day, nothing major going on and see how that will burn. Obviously that's going to have lower results than if we pick a Santa Ana wind day, which in this case we picked the same weather conditions that occurred for the Freeway Complex Fire.

We look at the proposed land plan. We look at the -- where the houses are, the where fuel mod is, if there are areas where the fuel mod is deficient, and we look at that in relation to the fire environment on the site.

Then we take the land plan and we flip it on its side so that we can get a look at it from a profile view and just make sure that our flame length -- predicted flame lengths are not going to impact the structures. So we're taking care of one of the main concerns, which is radiant and convective heat.

The second concern then is the embers that Mr. Wymore talked about. The embers are actually in any of these projects or in existing the embers are the most important component because the fuel mod and the new building codes really take care of the radiant and the convective heat.

Another thing we look at as part of the hazard assessment is how far away is the nearest fire station for response. In this case we have -- our closest Fire Station Number 32 can arrive at the most remote portion of the project in just under five minutes. The standard in Orange County is for response in under five minutes 80 percent of the time. So we meet that code requirement.

So as our review of the project and assessment continued obviously it's actually going to have to be consistent with not the 2010 codes but the 2013 codes which are being adopted. There haven't been too many changes for the wildland urban interface areas, but it is a little bit more restrictive.

The project had all of the ignition resistance already built in; the walls, the exterior walls, the windows, the vents, any of the appendages to the structures. They would all meet the ignition resistant codes.

It included interior sprinklers which is a requirement. What is not a requirement are the attic sprinklers, which when we saw that we couldn't believe it because we've not seen a developer actually do that voluntarily before. And it's part of this redundant layered system that we want to see for fire protection.

There's no one component of the system that is relied on to prevent a fire from starting. Because we know systems fail occasionally. So if we have a system fail, like for instance the ember resistant vents are meant to keep embers of your attic. If one of those fails and an ember gets in and starts a fire, there's two ways that that helps.

We have a head up there or more heads that will likely extinguish the fire. The second part of that is it's going to set off an alarm on the side of the house that let's any responding fire engines that may be patrolling the area during the wild fire know that there's something going on and they can go into the structure and take care of it.

We look at roads. The roads on this one the widths are great. They're much wider than even the requirements. All the cul-de-sac lengths hose pull distances, hydrants are all at least to code. And they've added some strategically located fire staging areas and helispots, which of course is going to help the response not only for the project but for the area.

This is one of the road system diagrams or exhibits that we were looking at when we were doing our analysis.

The water improvements improve the reliability and availability for the area. The initial response time is good. Fuel modification actually exceeds requirements with the areas that Mr. Wymore noted.

I'll just quickly go through the four zones at the top he talked about already. Those are requirements. Then we have the additional zones that aren't requirements.

We have the fuel break zone, which is approximately 300 by 700 feet.

We have the fire prone vegetation removal zone. That's that large section in Mud Canyon as is a fuel break zone.

Special maintenance areas internally to the project. We can't let the internal areas go. That's even more critical in some cases than the external of primary.

And then there's an irrigated riparian zone down in Mud Canyon.

Now the key to this is -- because even in HOA's that have fuel mod zones approved say 15 or 20 years ago, a lot of those haven't been inspected in the last 15 or 20 years and there's no telling what condition they are in.

In this case the HOA is going to fund that inspection. Where OCFA has not had the staffing or the funding to adequately inspect all the fuel mod zones. This one is going to take care of that by getting someone like me out there every year and writing a letter that it either is or is not in compliance.

That fuel mod zone is a critical piece of this considering the high fire hazard that it's in -- zone. So it will be maintained to function as it's intended.

This is just to point out real quickly the fuel mod zones. They do go around the community and then these big swaths down here which are effectively large fuel breaks.

This one you just saw, but what I wanted to just point out is that these are actual model results. These areas -- the irrigated maintained landscape areas in fuel mod zones are all considered a certain fuel. It's an irrigated urban fuel within the models that we run and it's basically projecting that the maximum flame lengths, if you get ignitions in here at all, are one to two feet that a firefighter can handle with a shovel or a, you know, water tank.

The other thing is the project has a community evacuation plan and a very robust outreach for its citizens. It's going to have a web base, there will be fire safe council participation, drills with the fire departments with OCFA.

Another thing we did was we looked at potential evacuation trigger points. This was more for our own edification, if you will. And when you look at the after action reports, it took about two hours to two and a half hours for the fire from its starting location to get to the area where the project is. And the typical evacuation time for a community like this is anywhere from 30 to 60 minutes or so.

In this case the community has fully endorsed the Ready Set Go program. And what that does is it gets residents so that they are ready to go. They have their critical things in a box, like I do at home. And when I need to go, I put that in my car and I'm out of there.

FROM THE AUDIENCE: I can't get my horses out in time. I can't put them in a box.

MR. HUFF: I understand, sir.

FROM THE AUDIENCE: It takes longer than 30 minutes to get them out.

MR. HUFF: I understand. And that sounds like something that you need to start planning for. There's equine -- there's horse groups that come and help. And if you don't have a trailer -- it sounds like you have a trailer.

FROM THE AUDIENCE: I don't have a trailer. It takes longer than 30 minutes.

MR. HUFF: So as I was saying, our community will evacuate quickly. They'll be ready, drilled. And when they get the call to go, they'll be going, if not sooner.

FROM THE AUDIENCE: Enough is enough. We've been the student for an hour and a half. How about you right now get to the questions? We've seen your dog and pony. Screw this dam situation. Get to the questions.

MR. HUFF: So why does any of the stuff I'm presenting matter? Because the after fire reports and studies, not only from the Freeway Fire but from multiple fires, indicate that the codes are working. The codes are stopping structures from burning that have been built to the codes.

So these structures on the site will be built to the most strict codes in the country from fire protection and I won't take the time to go through each of these, but --

FROM THE AUDIENCE: Please.

MR. HUFF: -- the data supports that these houses will not burn.

MS. McCARTHY-WATERS: Let's let everybody ask the questions in the manner that I outlined earlier.

FROM THE AUDIENCE: No.

MS. McCARTHY-WATERS: Otherwise, if you just yell from the audience, it won't get included in the final document. You'll have a chance. Let him finish his presentation and then I promise every single person here will have a chance to ask their questions.

FROM THE AUDIENCE: When is this going to be done?

MR. HUFF: I'm on my last slide, sir.

FROM THE AUDIENCE: Speed it up.

MR. HUFF: The conclusion after reviewing the project, applying our protocols for assessments and risks, is that the project will perform very well against wildfire.

Further, it provides a net benefit to the area based on the fact that it creates a large fuel break which will change the fire behavior, reduce its spread rates and intensities through that area.

Thank you.

MS. McCARTHY-WATERS: Okay. Can you all hear me?

As I described earlier, I've got comment cards that you filled out. If you haven't filled one out, please do so and raise your hand and Roger will come. There's a couple of them over here.

We're going to go in the order that we received --

FROM THE AUDIENCE: No, no, no.

THE REPORTER: Okay. I need to go to the restroom before we take any questions.

Can I do that?

MR. WYMORE: What we're trying to do is we're trying to get all of the comments on the record because we want to get them on the record. She needs to be able to take them down.

FROM THE AUDIENCE: She can hear us.

THE REPORTER: No, I can't.

MR. WYMORE: No, she cannot hear you, sir. If you want to come up here and talk, then we'll do it in order and everybody gets an opportunity to talk.

THE REPORTER: Can I go to the restroom before we do that?

MR. WYMORE: Yes.

(Recess from 7:57 p.m. to 8:01 p.m.)

RALPH MUNDIA: My name is Ralph Mundia. I live on the -- right off of Stonehaven.

And I'm listening to all these things that this gentleman was saying, but he kept on saying the same things over and over again about different routes that we were going to be taking out of there in case there was a fire.

When we had the last fire, the firemen told me he says, you know, we got a nickname for your house. He says you're at the top of the chimney. So I don't see how are going to improve that. You're going to have to clean out a whole canyon in order to prevent a fire from coming up there again.

My fire insurance went up, but that's understandable. But you're going to have approximately thousands of people living up above us and if there is a fire, you're not going to get them out of there. And that's my thought.

I personally think that it's a big mistake to put any more houses up there above us. We don't need them. We don't want them.

Thank you.

MS. McCARTHY-WATERS: Okay. The next person is Johanna Mundia, M-u-n-d-i-a. You were together?

Okay. The next person is Kim Paul, P-a-u-l.

KIM PAUL: That's me. I am going to give my spot to this gentleman.

MS. McCARTHY-WATERS: Is Kim Paul here.

KIM PAUL: I'm right here.

MS. McCARTHY-WATERS: You're Kim Paul?

KIM PAUL: Yes.

Well, you know what, then I'll get up and talk.

I have a couple of questions and I also have some pictures regarding evacuation --

FROM THE AUDIENCE: Speak into the mic.

KIM PAUL: Oh. I have a couple of questions regarding evacuation and I also have a couple of pictures on this flash drive so I could ask my questions there.

Would that be okay to have her put them up?

FROM THE AUDIENCE: We can't hear you. You need to talk into the microphone.

KIM PAUL: I have some questions regarding evacuation because I think that's what the majority of people want. We've all lived through this. We couldn't get down our own streets. You're now wanting to put 500 houses more on top of us.

And I have some pictures and I wonder if she could put these in her computer so I could ask specific questions?

MR. WYMORE: We can plug them in and see whether they'll pop up or not. I don't know whether they will, but we'll certainly try.

MS. McCARTHY-WATERS: Does anybody else have pictures they want to show in connection with what they have to say?

KIM PAUL: I will be fast. Can you enlarge that at all?

COMPUTER OPERATOR: Yes. Tell me when to click through.

KIM PAUL: Okay. And I'm sure Mr. Wymore knows these roads very well. I live at the stop of Stonehaven and Heather Ridge.

MR. WYMORE: Okay.

KIM PAUL: So if you could point that out where that is.

MR. WYMORE: Where you are here?

KIM PAUL: Right.
MR. WYMORE: Then you're going to be somewhere in here I believe?
KIM PAUL: Okay. I'm right at the top of Stonehaven and Heather Ridge.
And on that day according to the after report at 1:35, between 1:35 and 2:15, in 40 minutes 100 homes burnt on Stonehaven between Hidden Hills and Via de la Roca, which is right at the entrance.
MR. WYMORE: Meaning homes that burnt this direction -- right -- coming down through here?
KIM PAUL: Correct.
MR. WYMORE: Right. And this being Hidden Hills back over here?
KIM PAUL: They started even easterly.
At 1:33 Bryant Ranch Elementary, which is right there near the bottom, was on fire. Within minutes -- this is according to the actual transmission which I have copies of it -- within minutes Saint Francis Catholic School was on fire, which is right adjacent to Stonehaven. That's Bryant Ranch -- where that green area is Saint Francis.
At the bottom of Stonehaven on the right-hand side is a senior citizen apartment of low income over 55. Most are section eight applicants,

which I'm sure you know what that means. The majority of them don't have cars. They rely on public transportation.

Across the street is a Kindercare which houses infants up to preschool, approximately 60 families take their children there.

And across the street on Yorba Linda Boulevard between Stonehaven and Via del Agua, the exact area that we've been talking about today, is Travis Ranch.

MS. McCARTHY-WATERS: Could you ask your question? You have already talked three and a half minutes.

KIM PAUL: Okay. My point is when we evacuated, we literally went with just the clothes on our backs. We were watching it on TV. We thought it was at Green River via the live coverage. The flames were going -- fire was spreading at over 100 feet per minute according to the fire report.

I went upstairs, saw that the houses on Heather Ridge were on fire. We literally ran down -- ran with our dogs and three cars. As we were coming down the hill, as everyone was trying to literally run for their lives, I looked to the left and saw Kindercare, I looked to the right, and I looked at the crosswalk in front of me.

And as I've lived there 26 years and have seen children day in and day out coming and walking to and from school, I thanked God that it was Saturday. Because Saturday afforded everyone the luxury of being at home, not at work, not at school, but being at home so they could gather their family and run as fast as they could.

Had that been on a weekday, we would have people in a panic trying to get back to their children from Bryant Ranch to Travis Ranch to we now have a brand new high school in Yorba Linda. We would have had unbelievable amount of tragedy on top of what was already experienced that day.

We have all your proposal of building these fireproof homes and this new evacuation plan that sounds so great on paper, but you did not live through what we lived through. There is no possible conceivable way that 500 more homes could handle the existing streets when we know those streets didn't handle it in 2008. And since then there's been more homes that have burnt.

It has nothing to do with a new evacuation plan. There's no streets. There's no new streets. There's no proposed streets. You simply want to pile thousands of more people upon streets that could not

handle it in the first place.
I want you to go to the next slide real quickly.
This is what the freeway looked like at Yorba Linda Boulevard.
Go to the next slide. I know I'm under time here.
This is how people had to leave their homes. This is -- these are all streets that were in walking distance of the entrance of Esperanza Hills.
Go to the next slide, please.
This is what it was like.
Keep flipping through.
These are how people could leave. This is the only way people could get out. There was -- they had to choose between either trying to go down streets and be trapped in their car or choosing to get out of their car and flee on foot in hopes to get to some place to exit the city. It had nothing to do with an evacuation plan. There were too many cars on too little streets.
And nothing in all your proposal has changed that other than adding more cars.
Next slide, please.
This is what it was like. I want you to

notice there's no fire trucks. There's no magical fire trucks that live in your new development that would have saved these homes.

Next slide.

This is what the freeway why looks like. It had nothing to do with an evacuation plan. This was mother nature.

Next slide please.

These are homes. This is a home right around our corner. People were lucky if they could get their dogs much less their horses.

I see you have equestrian trails in your new gated development. So I don't know, are you going to have horses there? Or I don't know what these trails are for because the rest of the community can't get into your development.

MS. McCARTHY-WATERS: Can we let Mr. Wymore respond?

KIM PAUL: No.

Keep going to the next slide.

MR. WYMORE: The trails --

KIM PAUL: This is --

MR. WYMORE: -- are for people to go through Blue Mud Canyon and everybody will be able to get into the trails.

KIM PAUL: Okay. So the next slide.

This is -- this was -- as we were watching the news, this is a home on Heather Ridge. I live right around the corner. I happened to see it go up in flames. This is what our street looked like within minutes of the fire. This is what we tried to escape through.

Next slide, please.

This is what San Antonio looks like.

Next slide.

As hard as the firefighters tried to save homes and as hard as the sheriff's department tried to knock on doors, we just saw fire trucks go right by our houses as our houses burned.

Next slide, please.

MR. WYMORE: May I make a suggestion?

KIM PAUL: No, sir.

Let me make a suggestion. Address the fundamental problem and that is there is no evacuation ability for the existing homes that are there much less 500 more homes.

And the fact that it was on Saturday when people were home with their families and not at work and not at school is probably the single reason that lives weren't lost.

Because I guarantee you if I was at work and I had a child at Bryant Ranch or Travis or Kindercare or at a high school, I would do everything in my power to get to that child because I know I couldn't get through on a phone, I know I couldn't call the school and have them answer, I know I couldn't call a five-year old child to see where he is.

So you are going to have parents doing everything they can, moving heaven and earth to come back into an area that's trying to be evacuated to save their child.

This does not just affect Stonehaven. This affects everyone in east Yorba Linda, everyone, whether they realize it or not. Because if they have a child at Bryant Ranch, you can bet they're going to do everything possible to get back into that city.

Next slide, please.

MR. WYMORE: My suggestion is that when you finish with your slides -- how many more do you have?

KIM PAUL: Well, we had 100 homes burned --

MR. WYMORE: I understand.

KIM PAUL: -- within 40 minutes.

MR. WYMORE: Okay.

KIM PAUL: I only have a couple pictures of -- these are just homes on our streets right there.

MR. WYMORE: I understand.
KIM PAUL: Keep flipping through.
There's one. There's another. What you don't see is fire trucks. Here you see a fireman having to use a garden hose.
I know you have staging areas and reservoirs. We should have reservoirs regardless. That's a whole separate issue. That's a city issue. We pay for reservoirs that were never built. Yorba Linda City stance was go ahead and sue.
Well, you know what, the residents sued. They were awarded 70 million dollars, but that does not bring back their house.
Go to the next slide.
MR. WYMORE: My --
KIM PAUL: No.
MR. WYMORE: No, no, no. Just listen. I'm not trying to cut you off. What I am going to make a suggestion is we're here to get comments, you're making comments, you have the slide. If you let her copy that, then we can forward that to the county as part of your comment.
KIM PAUL: I have a 120 pages of actual transmission documented transcripts from police and fire of just of what happened in our hills. I have

these pictures and much more that's going to be sent in my -- please flip through. I just want to show one last picture and then I'll let other people speak.

MR. WYMORE: I just want other people to be able to speak.

KIM PAUL: And they will. I just want to show -- because you had this really nice graphic -- that's another house right by our house.

As you can see, people -- again people -- keep going one more. That's the Honda dealership, San Antonio.

You had a really nice graphic that you guys probably spent a lot of money to create the entrance of your development. I want to show you what the entrance your development looked like on 2008.

Keep going.

MR. WYMORE: So the bottom line is --

KIM PAUL: Keep going.

MR. WYMORE: -- so that people are going to be able to talk, other than yourself, --

KIM PAUL: Yeah, right there.

This is the entrance. These people couldn't even leave in their car. They were trapped by the traffic and the flames and the intensity.

MR. WYMORE: Where are you saying this is?

KIM PAUL: This is Via de la Roca, right at the entrance, the exact entrance.
FROM THE AUDIENCE: (Inaudible.)
MR. WYMORE: I'm sorry. Just a minute.
What was the exact address?
FROM THE AUDIENCE: It was across from 4795 Via de la Roca.
MR. WYMORE: 4795 Via de la Roca.
FROM THE AUDIENCE: That's our address and there's four houses and it's coming in.
MR. WYMORE: All right. Thank you.
Okay. So we can take this and put it into the county along with your comment. I want to give other people an opportunity to do it or you can do it yourself.
KIM PAUL: No, I have everything that I'm submitting not only to the newspapers, but to the county.
But I just want -- we've watched all your pretty pictures. I want you to see what our pictures look like.
MR. WYMORE: I understand.
KIM PAUL: Thank you very much.
MS. McCARTHY-WATERS: Thank you, Ms. Paul.
Our next speaker is Kent E-b-i-n-g-e-r,

♀

Ebinger.

Please, try to keep it to three minutes and form it as a question so we can respond.

KENT EBINGER: I am going to give you a bunch of questions.

MS. McCARTHY-WATERS: Good. Go for it.

KENT EBINGER: So start writing down.

Okay. First of all, you sit there and say that you -- by the way, Kent Ebinger, 26 year resident.

FROM THE AUDIENCE: Talk into the microphone.

KENT EBINGER: Kent Ebinger, 26 year resident.

You say you have legal right to these roads, but is it not just -- you don't need to answer right now because I am going to keep going. Right now you're going through a rezoning because it's an open area. So you're having to go to the county and the county is asking you to come here and address this. That's number 1.

Number 2, I find nowhere and I know for a fact that you and your company specifically has approached both Friends and Texaco as far as their ownership yet no mention is mentioned whatsoever. Why not?

MR. WYMORE: Do you want me to answer that right now?

KENT EBINGER: No.

MR. WYMORE: Oh, okay.

KENT EBINGER: Number 3, you can have the greatest plan as far as fire exit and all of the other things, then please tell me how you can have the greatest of efforts and plans and today 210 Freeway because of the reverse 911 became a parking lot. You gotta start taking -- your figures can lie and liars can figure.

MR. WYMORE: Okay. Thank you your comments.

MS. McCARTHY-WATERS: Do you want to answer anything?

MR. WYMORE: No, just keep going.

KENT EBINGER: Oh, you're not going to answer?

MR. WYMORE: Oh, I didn't think you wanted me to answer.

KENT EBINGER: Absolutely.

MR. WYMORE: Oh, all right.

Well, as far as the 210, I don't have a comment because I don't know anything about what's going on with the 210.

With regard to Yorba Linda land, I'm not in negotiations to purchase Yorba Linda land. It's 40 acres at the top that we don't consider developable. We loaned them money, because Gary's brother is a partner in it, in order to pay their taxes before it went to tax sale and right now one of the partners doesn't want to pay us back. I have no intention at the present time or in the future of ever developing anything on that particular piece. It's 40 acres. It's a canyon.

The Bridal Hills property is owned by the Friends family and I have talked to them. I have not made an offer to them to purchase the property. They've got it listed. They had it listed for approximately a year at some number. I can't remember what it was. And they have since gone to a different broker. I've not made an offer to them. I don't know whether I am going to make an offer to them.

The only way that the Friends property is developable, frankly, is if it gets about 3,000,000 cubic yards of dirt from our property that we have under option up in the corner, which is the Yorba Linda Estates North property and then we would have to shift that over. That makes that property very expensive to develop.

However, knowing that some day somebody might develop that property and knowing that we put it a design on it for 38 units, I included all that in our traffic plans.

And the third question I think I answered.

I don't remember.

Did I answer them?

KENT EBINGER: Yes.

MR. WYMORE: Okay. Thank you.

MS. McCARTHY-WATERS: All right. Thank you very much.

Okay. The next speaker is Rob Bartels, B-a-r-t-e-l-s.

ROB BARTELS: Well, I gotta give you guys credit. The last developer chickened out and had the county do their presentation for them. So I gotta hand it to you guys for taking the heat here.

Just got a letter from Todd Spitzer apologizing for that last meeting that the last developer chickened out on. And Todd was very apologetic, the county supervisor, and in it he characterized our evacuation in 2008 as -- and I'm quoting -- "virtually impossible."

Now this is the county supervisor who has the lead on approving this thing. That isn't very encouraging words from the head of the county supervisors who is going to be overseeing the approval of this.

Now how do you characterize putting another 500 homes in? Is there a word for more virtually impossible? I mean the insanity of what you guys are proposing really, really staggers the mind.

I know that you probably all have college degrees and you've got all of your credentials that you're trotting out here today, but this is really 6th grade math, fellows. I mean come on, a 6th grader could look at this and know that adding another 1,000 vehicles to a virtually impossible evacuation with no new roads being proposed, using the existing roads that we're all going to have to use, is just sheer insanity.

Mr. Wymore?

MR. WYMORE: Yes, sir.

ROB BARTELS: Can you tell me how many sheriffs -- I'm retired law enforcement -- can you tell me how many sheriff's deputies are on a typical shift --

MR. WYMORE: I can't.

MR. ROB BARTELS: -- in the City of Yorba Linda?

MR. WYMORE: I can't. But I have talked to Lieutenant Wren about what would happen --

ROB BARTELS: Okay. That's all great.

MR. WYMORE: All right.

ROB BARTELS: But if you talk to Lieutenant Wren, I'm surprised he didn't tell you, that there's typically four deputies on a shift. And you're already showing --

MR. WYMORE: No, I don't -- I've been to his office on multiple occasions. I have seen him in his office on multiple occasions during the day. I have never seen less than six or eight guys in that particular office. So I would be shocked if there wa only four on.

ROB BARTELS: Okay. Well, you're probably including the staff, the detectives that they have. Uniforms on the street. Okay? Tops; five or six. Okay? So all of these intersections that are magically going to be manned by a deputy. It ain't going to happen.

Okay. Have you ever worked an evacuation before?

MR. WYMORE: I've been in an evacuation. I wouldn't say I worked it.

ROB BARTELS: Okay. Are evacuations do they -- are they real -- do they go real smoothly? People panic.

MR. WYMORE: Right.

ROB BARTELS: Okay. And when people panic, all bets are off. Accidents happen, accidents can happen on evacuation routs. And when that happens, that compounds the problem infinitely when an evacuation route gets shut down because people panic and they run into another vehicle and now emergency vehicles can't get in to clear that because all of the outgoing traffic is filling all of the lanes. Emergency vehicles are not going to be getting up to your proposal.

I was there during the duration of this fire. I had a towel wrapped around my head knocking down fires with a garden hose. And OCFA never showed up. They're your big experts on this.

Okay. But the sad thing is that adds insult to injury because they aren't familiar with the dynamics and the specifics that are associated with the fire that happened in our neighborhood.

Here are your experts right here (indicating). These are your experts (indicating). Okay. These are the people -- these are the people that you need to be talking to.

Not -- OCFA can give you generalities about what happens in a wildfire, but we have some very specific dynamics that we were exposed to. And you're not going to get that picture if you talk to OCFA and you're not going to get that picture if you talk to people who just deal in theoreticals.

Okay. Most of the people here saw the impossibility of that evacuation.

And the other thing is -- before my time is probably already run out.

MS. McCARTHY-WATERS: Your time is run out, but that's okay. Go ahead.

ROB BARTELS: -- the governor has just declared a drought emergency. Where do you propose all this water for 350 hillside homes are going to come from?

MR. WYMORE: There's a water supply study that was done by the Yorba Linda Water District based on their supplies and they have that study. That's a 2010 study. That says that they have sufficient water to serve this site and the rest of their need.

ROB BARTELS: Well, the thing of it is, Yorba Linda Water District is going to be shutting us off. Our lawns are going to be dying. And that's going to be real hard to justify for them when they're going to be creating the demand for 350 hillside homes. And I imagine that they're going to be taking the heat from people showing up at their meetings who can't keep their pools filled or keep their landscape alive because you guys are going to be soaking it up up here on the hill. So that's another thing you guys had better --

Words that come to mind for me when we talk about this development are unethical, immoral. And if there are deaths or injuries that result from this, if this thing goes forward, I think we're going trip over into the criminal. Because you guys have been warned. We're up here warning you tonight.

You can't claim ignorance. When they're pulling bodies out of houses, you guys can't say we didn't know because it's all going to be on the record. So keep that in mind.

I mean, yeah, you know, there's going to be some money made here, but is it worth going to prison for?

MS. McCARTHY-WATERS: Thank you, Mr. Bartels.

Our next speaker is Kenneth Peterson.

KENNETH PETERSON: Hello. a few comments.

First of all, my name is Kenneth Peterson. I live on Casino Ridge.

A lot of the pictures that you have as far as the before and after is actually a part of my home. If you look down from where my house is and you see the new and improved version of what's going to happen, what you see really is where they've moved a mountain into that area. So it's a huge, huge project. And my first objection is to the scope of this project. I concur with the prior speakers and their concerns for evacuation in this area.

You mentioned in your discussion with Lieutenant Wren and Lieutenant Wren was indicating that he wanted to have some more emergency exits here. And what I am hearing from you is that what you're having difficulty is that -- I think the words you used -- the other developers, if they play nice, might be able to work a better improvement with regards to the water, the access.

My thinking is that this is sort of backwards. That it really shouldn't be a situation where, well, we're going to work our project and then we're going to maybe work with the other developers depending upon how it is. That shouldn't be what's happening here.

First and foremost when you have an individual like Lieutenant Wren and he's saying that we want to have emergency exits; five, four, whatever it may be, then that should be number 1. It shouldn't be, well, maybe after the fact, after we've decided to do this, maybe if they play nice, we'll be able to get these exits. That's the wrong way this is going about.

It should not be that way. It should be first and foremost. What is the absolute best exit procedure that we can have here. What can we do to make this better than best. Not in a sense of making a project to work for us, but making the project work for the community. And that isn't the way it's being developed.

I understand that you're using the technical knowledge that you have, but you're not focusing this in terms of all the projects together and what is the absolute best way to approach it. You said it yourself with regards to the water we're talking about if they play nice. That shouldn't have even been an option.

You should absolutely have that to make sure that Cielo Vista and all of the other projects are incorporated. It should be first and foremost. Cielo Vista should be also having to do that as part of their development. It shouldn't be piecemeal coming in and if we can work together. That shouldn't be the way it is.

And what we're getting is this project that's being hodgepodged in putting it together and it might or might not be safe the way it is.

And the way -- I'm concurring with the other speakers. I don't see that here. I think it's a very large project, extremely large in comparison to what the actual area will allow.

Thank you.

MS. McCARTHY-WATERS: Thank you.

BRIAN GASS: I actually have to run. I've got a daughter who has got a project.

I just wanted to real quick --

THE REPORTER: Wait. Can I have a name?

BRIAN GASS: Sure. My name is Brian Gass, G-a-s-s.

MS. McCARTHY-WATERS: Okay. You were the next one up anyway.

BRIAN GASS: Perfect. Awesome.

The thing that really strikes me as really funny as I sit here and I look at your rendering of this really beautiful property that you have is that the opening to your property is actually wider than San Antonio.

MR. WYMORE: I think it is.

BRIAN GASS: And it strikes me as really odd that the opening to your property is wider than the street that needs to get thousands of people off the mountain. I don't know. Maybe it's just me. I don't know. Anybody else find that strange? It's pretty big.

That being said, I am going to get a little technical. I know that two of the four of your sides of your property border Chino Hills State Park. A couple of things bother me about that. I'm concerned about light intrusion into the park, how it affects the whole predator-prey balance. We all love living in the rural part of Yorba Linda.

You guys hear -- you hear coyotes. Last night it was amazing. There were so many coyotes on the hill last night with the full moon out. It was unbelievable.

What's going to happen when we take away their cover of darkness? How are they going to hunt? Your houses on these hills are not going to allow them to do that.

Secondarily, I'd like to know how your proposed 340 plus homes and the 112 plus homes for Cielo Vista are going to affect my dark skys. I moved into this neighborhood a year ago, a little over a year ago, because I could see the stars. I lived in Anaheim for 12 years and I never saw the stars.

So I want to know what you guys are going to do about that. How are you going to adjust it? Because all the current LED lighting, everybody says we're going to point it down, it won't intrude. It doesn't happen. Go to any of the existing neighborhoods that are out there right now and you lose that. I want to know what you're going to do about it.

MR. WYMORE: Okay. Do you want me to respond to that?

BRIAN GASS: Please.
MR. WYMORE: Oh. In the EIR we have -- what we have issues on the light pollution there are ordinances that we have to follow. There are particular types of light that you put in. We call them dark sky lighting ordinance over in Arizona, but everywhere you've got different types. And it's very likely that we would design our own lights that would be lower and that also would create less pollution.
As far as pollution going into Chino Hills State Park, the park borders as you know on the north and on the east. And there's also hills that pretty much separate us from the park in both directions.
The main entrance to the park, which would be the lower area, would be through Blue Mud Canyon. And the only lighting that would be going in through Blue Mud Canyon would be along the road going in and we can adjust that lighting to be lower lighting along the roads rather than the big overhead lights.
BRIAN GASS: What about your homeowners in their backyards? Are you going to tell them what lights they can install and not install?
MR. WYMORE: Yeah, there's going to be some pretty severe homeowner restrictions on what kind of lights can go in. The homeowners association in this area has

to handle not only a lot of things having to do with the fuel modification and streets, but it's going to maintain streets, it's going to maintain lights, it's going to maintain those types of things at its expense. So, therefore, it will be the one that is going to say here is what you can put up.

BRIAN GASS: You're not going to be able to police lights in people's backyards and their patios that shine unless you've got light police running around. That's not happening. You know that and I know that.

MR. WYMORE: Well, what I know is that there's going to be more light there when this is built than there is now. You're absolutely right about that. The only thing we can do is mitigate that and that's what we're trying to do.

BRIAN GASS: Well, I'm not comfortable with the mitigation.

MS. McCARTHY-WATERS: Okay.

BRIAN GASS: And I'd also like to have you explain why your --

MS. McCARTHY-WATERS: Do you want to say that into the microphone?

BRIAN GASS: And I'd also like for you to tell me -- that looks like it's about 75 feet. And San Antonio as you witnessed said it was 40 feet and could handle

12,000 cars a day. I don't know about you, but I don't want to live on street that has 12,000 a cars a day.

MR. WYMORE: It doesn't have 12,000 cars a day.

BRIAN GASS: That's the capacity.

MR. WYMORE: Yeah. The capacity is 12,000 cars a day. The existing is I think somewhere in the neighborhood of 3,000, 3,500 cars a day. And this is going to increase that. There's no doubt about that that it'll increase the traffic.

And, yes, the reason that we have wider roads going in and going out is so that we have right and left turn lanes coming out when you get to the end. So, yes, they're wider than San Antonio.

BRIAN GASS: Are you willing to widen San Antonio or Via del Agua as part of your project?

MR. WYMORE: I don't know that I can widen Via del Agua. I talked to the city about widening San Antonio to see if that's what they wanted to do. At the time Mark Stowell was the city engineer and he said, well, he didn't think there was any room to widen roads. I don't know whether there is room to widen roads down there or not.

At the time we were going with Aspen Drive which, you know, went up and then through that other neighborhood and I don't -- there's not an opportunity to widen it up there.

Is there an opportunity to widen it down below? I don't know, honestly.

BRIAN GASS: Obviously, you know, you guys said that it's 40 feet, but the big issue is that's a bottleneck right now. That's the issue.

MR. WYMORE: I think there's about 370 homes on average that use that as their main daily deal today.

BRIAN GASS: For San Antonio?

MR. WYMORE: Yes, sir.

BRIAN GASS: Including landscapers, poolmen, gardeners, maids.

MR. WYMORE: Well, no. I'm telling you there's 370 homes. In order to do judge the traffic, you have to do traffic counts. That's what Keil did. So he did traffic counts. That's how he came up with his traffic report.

BRIAN GASS: Did he take into account the Cielo Vista project?

MR. WYMORE: He took into account the Cielo Vista project when it comes out to the Stonehaven traffic not when it comes to the San Antonio traffic.

BRIAN GASS: That's garbage in garbage out. That's what that is.

MR. WYMORE: You want to make a comment that it's

garbage in and garbage out on the microphone, that's your right. I don't agree with you.
BRIAN GASS: Well, they're still going to drive out that exit.
MS. McCARTHY-WATERS: Okay.
BRIAN GASS: Thank you for your time.
MS. McCARTHY-WATERS: Thank you for the comment.
We have 12 people who still want to speak.
The next speaker is Steven Pollack, P-o-l-l-a-c-k.
STEVEN POLLACK: That's right.
MS. McCARTHY-WATERS: If you could focus into a question that we could respond to -- almost everybody has gone over time and I want to respect the fact that you want to share your experiences, but it's more useful to the process if you can focus it into a question.
STEVEN POLLACK: All right. Thank you.
First of all, I think I got an idea of what -- part of what I wanted to ask about the 370 homes?
MR. WYMORE: Yes, sir.
STEVEN POLLACK: In other words. We're going to have double what we have now accessing San Antonio; right?
MR. WYMORE: San Antonio has 11 more lots that are

up by the Casino Ridge subdivision that I think were approved but weren't built because the Yorba Linda Water District wouldn't approve booster pumps, individual booster pumps. My understanding is those 11 are going forward.

And then in addition to that it depends on which exit we have. If we have option 1, then it would all go out Stonehaven. If we have options 2, 2A, or 2B, then most of it would go out San Antonio.

If it's 2B, then 65 percent of it would go out San Antonio. So would it double up? No, but would it increase by 60 or 70 percent? Yes.

If it's option 2, then it would roughly add 340 units and eventually 370 which would be exactly doubling up assuming Bridal Hills goes.

STEVEN POLLACK: At least that gives me an idea proportionally what I'm possibly facing. I live right on San Antonio and I'm still rebuilding that house. And that's dramatically impressive to me to have possibly twice as many cars as I have now coming down the street in front of me.

The option about going down the canyon behind my house, which is what you're talking about instead --

MR. WYMORE: Right.

STEVEN POLLACK: -- of Aspen going all the way down. Nobody's thought about the noise in there because that whole area acts as an amphitheater. So there may only be a few dozens homes in there but all those people along there are going to be listening to cars that are going down through there instead of coyotes and that completely eliminates -- it destroys whatever privacy or peace that we have now.

It's going to be a huge impact. I don't see any way you could do that other putting in sound walls and then we're looking at sound walls instead of a beautiful canyon. So that's a major concern for me.

The traffic study I still don't understand. I tried reading it and it didn't really make sense to me, but I don't read that stuff.

How was that done? When was it done? I never saw strips across. What is it done on a Saturday or on a busy school morning?

MR. MABERRY: I can answer that.

MS. McCARTHY-WATERS: Go ahead.

MR. MABERRY: There was an a.m. peak period and a p.m. peak period, which is 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. at the intersections. This study actually was done in May 2012 and the two counts were done in I believe October of 2012. Those were done on a typical weekday. So either a Tuesday, Wednesday, or Thursday.

STEVEN POLLACK: With clickers or with strips or what?

MR. MABERRY: The peak hours counts are done by a person by manual. He counts every moment and those are extremely accurate. The technology on the road tubes are very accurate as well. I would say they're very accurate.

STEVEN POLLACK: I never saw any road tubes so I was concerned about that.

All right. And then the thing about the evacuation plan and the sheriffs getting down there. I volunteer with the Sheriff's Department and I know a lot of those guys.

And I want to ask about egress or ingress, whichever it is. If you're not allowing people to come back into the area because they're feeding off the freeway, et cetera, what about the people that other people referred to who need to get back to our home that aren't home at the time and need to get back to our families and animals and evacuate?

Is that -- are we going to be blocked off or are we going to be able to get through there because there's going to be some serious problems even with my buddies not letting me back up to my house.

MR. WYMORE: I don't know the answer to your question. All I can tell you is that Wren said once an area is evacuated, that once people came out, they wouldn't be allowed to get back in.

STEVEN POLLACK: Well, there are going to be some huge problems with people needing to get back in there and six cops are not going to stop, you know, a mother from getting back to her children or me getting back to my animals or family. That should be addressed.

Do you have to disclose to the people buying these beautiful homes that they're living 120 feet from an active fault? Do you think that will be an issue?

MR. WYMORE: Nobody's going to be living 120 feet from an active fault. But the answer is you have to disclose everything and where the active fault is and furthermore there's no reason why we wouldn't. We spent hundreds of thousands of dollars to study the fault and we got a fault report that we had to get approved by Orange County, had the state geologist out there. So we'll disclose the fault to everybody.

There would be -- it would be in our best interest to disclose it to everybody so somebody doesn't come in later and say, hey, you didn't tell me about this.

STEVEN POLLACK: It looks like the lines were right behind the homes.

MR. WYMORE: No, the fault goes through Blue Mud Canyon, then we had 120 foot offset from where we found the fault going north. There are no homes within that 120 feet. There are no lots within that 120 feet. Then the lots start. So the nearest home is going to be 3 or 400 feet away.

In addition to that, our engineers -- our geotechnical engineers will go through and make recommendations and requirements on any homes to be built on any of those lots and they're going to have to certify the pads on any of these lots and so on and so forth before we can build a home. The answer to your question is we'll disclose it to everybody.

STEVEN POLLACK: Okay. Thank you.

MS. McCARTHY-WATERS: Thank you very much.

FROM THE AUDIENCE: Does the fault cross San Antonio?

MR. WYMORE: Yes, it does.

You know where Aspen Drive is where it cuts off, do you see that house that's just south of Aspen Drive that has that area in it, you know, that looks like a corral and then the house starts. That's the fault. From -- according to a previous fault --

THE REPORTER: His light is on behind you.
MR. WYMORE: I'm sorry?
THE REPORTER: This light is on.
MR. WYMORE: Oh. Well, that won't take it all the way to Aspen, but the bottom line is that's where it is, but at Aspen, right below Aspen, just South of Aspen on that particular area is where a previous developer has identified the fault.
Is that correct, Jeff?
MR. HULL: Yes, the fault's been identified pretty clearly along it's 40 kilometer length all the way up through Brea. The fault has been located quite well throughout the past 30 years of developments and it according to our studies matches really well where everybody expected it to be. And there's parks and all kinds of different land uses that are not residential that it occupies.
MS. McCARTHY-WATERS: Okay. We have -- a speaker is before you, James Kloman.
JAMES KLOMAN: Well, thanks for being here and trying to explain this stuff to us but we obviously don't believe a lot of it.
The evacuation plan I don't get. I mean I was here. You couldn't get out. And I guarantee you four or five or six cops aren't going to make any

difference. And then you've got fire engines that are going to go up Stonehaven to get to those houses to put out the fire. Come on. Who are you kidding?

But my concern, which is a little bit different, is this gentleman who is talking about how many cars are able to go down Stonehaven in a day, 24,000 or something. What was that number?

MR. MABERRY: The modified capacity was 6250.

JAMES KLOMAN: Okay. That's what, 24 hours a day? There's nobody going down there at night. We're talking -- you know, the problem is 7:00 to 9:00 and then in the afternoon.

You also said that in I believe it was every home will only make two trips a day; right? And that's not true. My wife makes at least two trips. I make at least two trips a day. And if I've got a couple kids, they're going to make two trips a day. Come on.

We've got 200 homes in the Stonehaven area right off of Stonehaven, probably 200 homes at the most. And in the morning at 8:00, 7:00 trying to get out of Yorba Linda Boulevard, there can be five to ten cars lined up. That's 200 homes.

Now you got 500 more homes that you say are all going to go down Stonehaven and, let's see, that's two and a half times more. So we're going to have, what, 10, 20, 30 some cars lined up on Stonehaven to get out onto Yorba Linda Boulevard at 7:00 in the morning to go to work. We're all going to have to get up about 30 or 40 minutes earlier just to get to work.

What's the deal?

MR. MABERRY: I can try to answer those in order.

The 6250 is the capacity. It's not an actual volume. Stonehaven the actual volume is in the order of like 1200 on a daily basis. The trip duration estimation per home is 9.57, so 10 trips, not 2. So we estimated almost 10.

The queuing issue that you're anticipating on Stonehaven at Yorba Linda or Via del Agua, there's service calculations that are in the analysis that will give us the estimated queuing and I don't know each one for every intersection, but the level of service is adequate except at Via del Agua currently operates below service and that's because of the left-turn movement is stop controlled, but the recommendation in the mitigation is a traffic signal which will mitigate that delay. But the level of services there are adequate based on the analysis.

JAMES KLOMAN: Adequate. If you don't mind sitting at the light for two or three minutes now, times 30 cars, you know they're going to be lined up there because that light is not going to change any more or any faster because we've got more cars. It's not going to happen. Because right now it's two minutes to get out there. So anyways.

MS. McCARTHY-WATERS: You've got one minute left.

Do you have any more questions?

JAMES KLOMAN: No, I'm telling you it's the traffic that bothers me and the evacuation plan is a joke. It's -- it looks nice on paper, but as the gentleman said, there's not enough cops to move that traffic and I don't know where they're going to move it to.

It just is -- I've been here 26 years. The day I came down some guy crashed into somebody because he tried to go up the parking lane and he was just out of his mind, obviously, but a car tried to turn left and bam, there he went. And so good luck.

MS. McCARTHY-WATERS: Okay. Thank you.

The next speaker is Ken Ryan.

KEN RYAN: Thank you very much. I appreciate your time tonight.

I have six questions and they focus on public benefit both from a design and from a safety perspective, not just about your project but in terms of all of our immediate neighborhoods that surround

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this project.

I'm over a 20 year resident in this neighborhood. I live off of Via del Agua. I also have a lot of background with our city; two years on park and recs, six years on our planning commission, two terms as mayor, two stints or two terms on the council. And for current council members and past council members that are here tonight in dog years that equates to about 100 years.

I'm also a partner -- I'm an urban planner and I'm a partner with one of our counties most well-respected architectural and planning firms.

We didn't evacuate. I'm a mayor and I did not evacuate. It was total chaos. And the idea that you could get out on Yorba Linda Boulevard was not real. We didn't put our family in jeopardy. I was ready to go, but we stayed.

And there was no fire personnel. And I do want to talk about all the science. It's not just science. One of the reasons more homes did not burn down, particularly in our neighborhoods, is because we stayed.

That car that -- that picture of that car that was burned out, that car was on fire when myself and my two sons and many of my neighbors behind me put out fires in people's houses to keep those houses from burning down. And Sharon Ringwire can tell you about that.

So I know fire is a big, big issue, but the reality is one of the previous speakers was more eloquent than that about that these are the folks that know what really happened.

My six questions are both this project and Cielo Vista and all the other ownerships should be coordinated from a process and from a design perspective to analyze impacts. It's how we've treated every area including not just your project, but this area.

Vista del Verde was the same way. It didn't matter how many owners were in that area. There needed to be -- if there was going to be future development, it needed to be coordinated and not have this pointing thing going on well, that's these guys and that's those guys.

So my question of that is what's the status of that?

Second question is that primary access should be at the base of San Antonio. It's not going to make everybody happy, but it minimizes impacts to our friends and neighbors on San Antonio. It minimizes impacts to folks that live on Stonehaven. It minimizes impacts to those of us who live on Via del Agua.

And to say it's an option I think does us a disservice. What's the status of that? Just because it's an option in the EIR that doesn't answer your question. I know it takes coordination with Yorba Linda leaders, with resource agencies, with other landowners. What's the status of that?

Third question is I strongly believe a less intense alternative should be looked at, considered. I asked this before. It would reduce the number of units, reduce the impacts we're talking about, particularly on aesthetics.

All we're talking about is fire tonight, but I have a question regarding hillside grading required and what I believe is still a very over engineered plan. And our longstanding general plan has more than what you showed tonight. It has a policy we've implemented this over the years that as you get into the higher topography and steeper topography in Yorba Linda, you get less dense. And that's just not an overall density number. It's the product that's on those areas and what does it look like and how dense is it.

And my question to that is what's the status of an alternative that's more sensitive from a design perspective?

Fourth option, and you talked about it a little bit. This is the question. I didn't see it on the graphic completely, but I do believe in terms of all of our names, not just this project, how does the open space component at the base of Blue Mud Canyon that would connect -- and you don't have to be a billy goat. We all use our trails in this area.

How could you do something that's a larger public benefit? And I believe it takes coordination between me and the other landlords. Between our project of our neighborhood and between San Antonio.

Where is the passive open space and trails that connect those neighborhoods, not just to say there's a connection, but a meaningful connection, that creates value and aesthetics and beauty. I still don't see that.

My fifth question is vision. People don't move to Yorba Linda because we're a very efficient, fire-resistant neighborhood with wide streets and minimal landscape. I've heard words today about sparse planting, about limited planting, about fuel modification, about widening streets even in our existing neighborhoods. I would oppose that adamantly in terms of widening our streets.

You know, this is not about just protecting fire. It's about beauty. People move to Yorba Linda because it's one of the most beautiful places to live anywhere in Orange County. I start having visions of somewhere up in the high desert where there's minimal landscaping and with all due respect the engineering -- the over engineered plan that's very fire resistant. That should not be the vision for anything above our homes. My question is what's the vision and what's the balance?

My last question is public benefit. And I heard the word clustering. And we have once in a while in Yorba Linda we've allowed clustering to occur. Probably the best example of that is the Vista del Verde project.

But there was a major, major public benefit that went along with that. It was a 150 acre golf course, there was an orange grove trail park above the schools, there was trails that connected down to Carton Canyon that would allow those residents to go down to the redwood forest. It was about future park sites and it was about permanent dedication of other open space areas that were already entitled for development. That was the trade off about why we clustered.

So my last question to you is clustering, where's the public benefit, not just for your project, and if it's only just because you're going to have fire resistant homes and wide streets, I don't believe that's good enough.

thank you.

MR. WYMORE: So, Ken, did you want me to address those questions one at a time or do you want me to address it later? I can answer some of them.

Give me the first one again.

MS. McCARTHY-WATERS: Do you want to come back up here?

KEN RYAN: Sure. I don't care how you do it. I just want them answered.

MS. McCARTHY-WATERS: It was a lot of questions.

KEN RYAN: You only gave me three minutes. I can talk really slow. You gave me three minutes.

MR. WYMORE: Let me --

KEN RYAN: First question was what's the status with the coordination of all the landowners because we have a longstanding policy that all this area -- we don't really care how many landowners there are. This should be coordinated and planned together and that way you end up with a better project.

MR. WYMORE: We have under option the Nicholas

Long property which is 156 acres. We own 277 acres. We have the Simmons property under option and are looking to close on that faster than later.

The remaining property that's left are three pieces. It's Yorba Linda Land, which we don't think is developable for more than one or two units and we don't have any coordination going on with them because of the dispute I arose earlier and I don't think they intend to develop it any time soon.

We put 38 units in a preliminary design that I think we've shown to you already for the Bridal Hills property, but again depends on what Bridal Hills wants to do and right now they don't have a plan and I think they're just trying to market it to somebody who does.

With regard to the Cielo Vista, I've gone out and visited with Cielo Vista twice and I've asked them for other meetings and they don't want to meet with us right now and so the coordination seems to end there.

KEN RYAN: And you know their answer is the same that you just gave me.

MR. WYMORE: Well, as I told you when I met you in the office, you get a meeting with them, I'll be there.

KEN RYAN: It's not my job. It's your guy's job.

MR. WYMORE: Well, I can't meet with somebody who won't meet with me.

KEN RYAN: I did that for 16 years. I don't have to do that anymore.

MR. WYMORE: So the bottom line is I've done what I can do with regard to that. But if they walked in the door or they called me, of course, I would coordinate with them.

As far as the public benefit goes, I must not have made myself very clear because what I said was if we go down option 2B going down onto San Antonio, we're going to put a park in there which was something that we decided we ought to do after talking to you. And then bring trails off of San Antonio that would wind around through the canyon through Blue Mud and then up to the Old Edison Trail, which would be accessed by anybody from the public and there's parks in there.

As far as your comment about --

KEN RYAN: Before you leave that though, it's an option in the EIR. That doesn't make me feel comfortable. It should be the preferred alternative.

MR. WYMORE: Well, the bottom line though is that takes a lot of other things to make that happen.

KEN RYAN: So --

MR. WYMORE: The 21 --

KEN RYAN: -- make it happen.
MR. WYMORE: -- acres that --
KEN RYAN: Make it happen.
MR. WYMORE: It's easy for you. There's 21 acres that's owned by that that would be necessary for us to do. It's owned by the city. So the city would have to agree to it.
As you know, we also have issues with the gas main which we've designed around, but there's a major gas pipe that goes in there. That took us a while to get through so we could put a road in there.
There's also Waters of the United States in Section 404 Waters. We had the Corp of Engineers out there and we believe we have a design that they'll approve that goes through there.
So, yeah, we've spent a lot of money and a lot of time trying to make that work. If the city came back to us and said we want 2B and the county supervisors were willing to grant us approval for 2B, then we would do 2B. That would be our preferred alternative as well.
But you can't go through with your main design being something that's totally hinged on somebody else and that's why we've got option 1 being the one we've got legal title to.

Your comment about the arid landscape, no.

In the fuel modification areas is where we're talking about the California friendly plants. And the way that we came to that is because we received a comment on the water quality management plan from Coast Keepers. Coast Keepers told us we don't like your water quality management plan, particularly in the northeast area. We think you need to make some of your water quality management basins better.

And so what we did is we went through to Summers Murphy, who are our architects down in Dana Point, we looked at some things that had been done in other areas, we looked at some parks that for instance were down in San Juan Capistrano. And it's going to look very good and it isn't going to be arid.

The part that you're focusing on is what I'm focusing on in Blue Mud Canyon. You're going to have an area that's very lush because it's a mitigation area and then you're going to have some areas that go more for fire protection.

And when you go between the houses on the hills, you're going to have areas there that are fire protection, but it isn't going to look like a desert by any stretch of the imagination.

And as far as the vision for the project, as you know, because at one point in time you worked with Gary on part of it. This has been a six or seven-year project and he's worked on it for a long time. And we think that the density levels that we've come up with are appropriate. We understand you disagree.

KEN RYAN: Great.

MR. WYMORE: Okay. Thank you, Ken.

KEN RYAN: Thank you.

MS. McCARTHY-WATERS: Okay. Our next speaker is Marlene Nelson.

MARLENE NELSON: I'll make this brief. I just have a few.

Just for clarification, after entitlement will you be the builder or are you going to sell the land off to an outside builder? Do you know who the builder is at this time?

My other question is -- and I don't expect an answer. I haven't dug through this myself -- have you relied upon the recent County General Plan Amendments that were a result of the Saddlecrest Development that were recently struck down by the Orange County Superior Court and which is pending that developer's decision to appeal?

I have a question on your primary access route going off the Stonehaven route, there is a notation on that there's a bridge to go across Blue Mud Canyon. What measures have been taken or addressed for emergency access or ingress or egress with an earthquake? Because your homes are going to be north of the fault and that trail coming down is a primary access that's going to have this bridge and what's the process if you have something that happens to Blue Mud Canyon that disrupts that ingress and regress?

And I have another question. I was noticing that you had in the comments of the evacuation and you commented tonight that you have lanes dedicated for ingress and egress and you've got some divided roads that are ingress and egress.

And like other speakers have told you, you can say that that lane is for going up and that lane is for getting out, but when the panic sets like it did for Agua, there were three wide coming down and there was nobody going up.

And I agree wholeheartedly with a lot of people that the sheriff's office may know that they need so many deputies at each of these intersections to get out. They will not -- as it came as fast it came in '08, they will not get to those intersections fast enough before they are clogged with people trying to get out and they will not get their apparatus up.

I think that I'm going to be really brief today. So that's all I have.

Oh, and just as a visual, I was looking at the traffic and so people are saying, you know, the traffic -- the roads can handle it and so forth, but I did notice that in -- with respect to Agua being the main entrance with the traffic signal control and/or San Antonio that visually the turn -- the left-hand turn going up to Agua as you're going south on Yorba Linda Boulevard where you would turn left to go up Agua is stating that that left-hand turn niche would have to be extended from the current 100 feet to 286 feet.

And I looked at the map and visually that turnout niche would just about almost be to Yorba Ranch Road where the minimarket is. And so if the traffic isn't going to be so bad, when you visually think about having to have a turnout niche that long and that much longer than it is now -- well, it tells me that somebody is expecting a whole lot of business going down there.

I know when I come up Yorba Ranch Road and turn right to get to Agua, I turn right and then I have a ways before I can turn into the left-hand turn lane to go up Agua.

As I'm envisioning it now that left-hand turn niche is going to almost be to Yorba Ranch Road. So when you make that right-hand turn if that queuing is filled, you're going to have cars with their rear ends sitting out in the traffic lanes and I expect some rear-enders are going to occur there.

Just the visualization of having those left-hand turn ques go two and a half times longer tells me that we've got a whole lot of cars coming up there. That's it.

MS. McCARTHY-WATERS: Thank you. Thank you very much.

MR. WYMORE: Okay. Let me see if I -- first off, I'll take the last one as a comment.

MARLENE NELSON: Yeah.

MR. WYMORE: Okay. All right. With regard to the earthquake and the bridge. We've got a span that would go across the jurisdictional delineation in Blue Mud Canyon which would require not necessarily a bridge but a culvert anyway -- not a culvert, but a -- yeah. It has to be specially designed. It has to be perpendicular to the fault. It would have to go to certain design standards because of where it is and what it's doing.

And that's something that's been covered in our geotechnical letters that are a part of the deal.

Saddlecrest, yes, I'm aware that there was a Saddlecrest approval through the county. I'm aware that the EIR was challenged in court. I'm aware that the county and developer lost on it. That's as much as I know. I don't know anything else about it.

And your first question was?

MARLENE NELSON: Who's going to build?

MR. WYMORE: Oh. Our plan is to build it. So -- and as far as talking to -- but our plan is not to build the vertical construction for the homes. We do build homes in Arizona. We don't intend to be the home builder in California.

So the next question is what homebuilders have we talked to during the process. We haven't talked to any homebuilders specifically about building homes on this property with regard to contracts, but we did talk to the builder that built Casino Ridge and we talked to him and he's interested in doing something.

We talked to Standard Pacific and they said that they were interested. And we talked to The New Home Company and met with them. But again nothing's gone beyond that because there's no point. Until something at some point in time is approved there's really not very much to talk about.

And the last person I think Gary met with the president of Toll as he was designing the project and that's kind of how the lot sizes were determined, 70 by 140 on the bottom and 90 by 110 on the top. Those are the building pads, not the actual lot size. The actual lot size I think averages 18,000 square feet.

MS. McCARTHY-WATERS: Thank you.

Okay. The next speaker is Jan Horton.

We still have nine more speakers left so just keep that in mind and try to keep your questions succinct so we can get to everybody.

JAN HORTON: It won't be so succinct, but we'll try.

MS. McCARTHY-WATERS: Just try. That's all we have ask.

JAN HORTON: Thank you.

Jan Horton. I was on city council during this time and I was the representative of OCFA. So I have a little different take on some of the --

FROM THE AUDIENCE: We can't hear you.

JAN HORTON: Sorry.

Okay. First of all, we were just blessed nobody died in 2008. It was only by the grace of God that nobody died in that fire because people really had a hard time. You saw the pictures and you heard testimony from people that actually lived in the area and it was only by the grace of God.

I can tell you in going on water tours and meeting with MWD that I have never seen the water district deny a project. Their stand has always been they can always get water, you just have to pay more for it. And so I don't trust when they say, well, this project is going to be great and you're going to have enough water. I don't believe them.

Your evacuation plan that includes Southern California Edison roads and access on the dirt roads that are going to be built, you're taking people right to the direction of the fire. Those areas are --

MR. WYMORE: My evacuation are plan doesn't encourage that.

JAN HORTON: Well, then I misunderstood at the beginning.

MR. WYMORE: Yeah. There's no evacuation from this property going over the Southern California Edison plans into the park.

JAN HORTON: Okay, I misunderstood that --

MR. WYMORE: I think what I said was -- well, if I misspoke, I misspoke and I apologize.

But my understanding was all of the evacuation is going to the west and to the south.

However, we have been requested that our roads will still allow Southern Cal Edison or whatever to go out those roads so they still have to connect. But none of our residents are going to be expected to go out that direction.

JAN HORTON: Okay:

MR. WYMORE: They have easement rights. They have road rights. We're not denying them those rights. We're still connecting to them. But there's not going to be any evacuation from this project to the east --

JAN HORTON: Perfect.

MR. WYMORE: -- or the north.

JAN HORTON: Thank you.

How do your experts suggest handling the traffic load from the 91 Freeway? People coming east from Yorba Linda and Hidden Hills and Bryant Ranch -- I am going to run through these and you can answer me later.

MR. WYMORE: Okay.

JAN HORTON: I'm trying to stay under my three minutes.

Are you using Esperanza, Orangethorpe, and La Palma? And they were already clogged with the disaster. And has anybody that you know of worked with highway patrol on how to handle when the freeway is also closed?

Great job evacuating your site. Unfortunately, it doesn't help anybody else in the area. It's not only about controlling the intersections.

We had a traffic overload that was unbelievable. People did not leave in one car. They filled up two, three, four cars and left the area. So if you're looking at households evacuating, it's not a good number. It's the number of cars that people have up there and if you have children that drive, that's how many cars were leaving in that one area.

Your traffics are good on a normal day, but how about disasters? Do you plan for a disaster or do you plan for a good day? And at least what I'm seeing you're planning for a good day.

The firefighter response -- they were overwhelmed by this. There was all the traffic coming down, as one of the speakers mentioned. Nobody could get back up because panicked people are leaving in mass and they're just using any roadway that they possibly can.

And the five officers, the six officers we have on duty are not going to be able to cover it. We had people going up Bastanchury from Lakeview going back up into the hills. There's just not enough police to cover the wide area that you can get access up into those areas.

Is your homeowner training that you mentioned going to include shelter in place? If you're hardening your homes well enough, I've read articles about hardening homes that people really don't have to leave. Is that going to be part of your training where you're asking them to stay in place while the fire is raging around them and will they?

And then -- let's see what. And then how many -- how does adding more people help with egress? I still don't understand that and it's been asked over and over again.

As part of your project, what are you going to be doing to help existing homeowners, people that are living there? I mean have you thought outside the box? So, for example, there was a company that came in and it was a private insurance company that as part of their homeowner policy they actually flew airplanes in and dropped that fire retardant stuff, that pink stuff on the homes that their insurers had, and it saved those homes.

Have you considered stuff like that? Have you considered offering sprinkling systems to existing homeowners? Have you considered hardening their homes? Things that will help the existing homeowners be able to handle some of the load that you're going to be putting on them.

And I think that was it.

MS. McCARTHY-WATERS: Thank you. Thank you very much. Just slide it back in there.

Okay. Did you want to respond to some of those?

MR. WYMORE: Well, we've considered a lot of things with regard to fire protection. I'll have Keil answer the ones on the 91.

I don't recall -- and you had another question there, Jan.

JAN HORTON: Which one?

MR. WYMORE: I'm trying to think. Shot it to me again.

JAN HORTON: Which one?

MR. WYMORE: Well, I think it was like your third question.

JAN HORTON: I jumped.

MR. WYMORE: Oh, shelter in place.

JAN HORTON: Right.

MR. WYMORE: One of the things that we had on shelter in place is part of the plan is when to evacuate and when not to evacuate. If the roads are clogged then this development is going to be one of those developments where shelter in place would be an option because it is hardened so that these people wouldn't necessarily need to leave.

It depends on the circumstances. However, the minute I say that, and I've said that before, then I get articles from people saying what, why, you're going to have people die because they're staying up there?

The bottom line is like the gentleman sitting to your left says, things are changed in a panicked situation when things are out there. If these people are safer to stay where they are then to go out on the open roads, then they should stay where they are. But if I sit here and I say, well, they're always safer to stay where they are. That's not correct going to be correct. And if I say they're never safer to evacuate, that's not going to be correct.

It's a situation that's going to have training that goes with it and then they'll have to make that call as it comes down. And that will have to be made in conjunction with whatever the evacuation orders are.

As far as thinking outside the box as to what I can do with -- to benefit the existing homeowners in the neighborhood. That's why we were constructing trails. That's why we were constructing some of those other things.

If there are other options out there, then we would need to sit down and have discussions. And as I've indicated to many of the neighbors who have contacted me, if you want to sit down and discuss things, I'm open to sit down and discuss things. It doesn't have to be these pubic meetings.

And I don't expect you to necessarily be nice to me. But I am open to sitting down and discussing anything.

MS. McCARTHY-WATERS: Okay.

MR. WYMORE: And then as far as the 91 Freeway.

MR. MABERRY: We conducted a CalTrans analysis. I believe your question was more related to an event. I think it started as what's the issue and part of the analysis we analyzed the freeway main line and the interchanges consistent with CalTrans requirements.

During an event I think that falls under the evacuation process and I think that's a coordinated issue with all the agencies.

MS. McCARTHY-WATERS: The next speaker is Cindy Ensign, E-n-s-i-g-n. Cindy Ensign is not here.

Ed Ehrman, E-h-r-m-a-n.

ED EHRMAN: Thank you for having us here today.

Been here since '73 and only a of couple questions.

A lot of the stuff that's already been spoken about was on my agenda so I'm got not going to go and rehash that again.

But I would like to say is that, number one, as a historian your number of fires in Yorba Linda I think is missing one. In '78 there was a fire where across from Kellogg that was evacuated. So add that to your list.

The other thing I kind of picked up on was the wind directions that occur in Yorba Linda. As we all know -- and I have to say that I have some firefighting experience -- wild fires generate their own winds. So it's nice to have a map that says where the winds normally go. There's 19 firefighters in Arizona that would probably debate that with you, their families would.

I guess my biggest concern really goes to traffic and I think Keil and I already discussed this and that's one of the options was to have a traffic signal at Agua and Yorba Linda Boulevard.

And Yorba Linda Boulevard is run during peak times as a coordinated program, which means if you had a signal at Agua and Yorba Linda Boulevard, I would assume if it is coordinated, that it would not be on demand. It would be on time of day.

So if there were an evacuation during that period that actually that could even be worse than having it as it is today.

Do you agree with that or not?

MR. MABERRY: I would expect that during an event the signal would be controlled by a peace officer.

ED EHRMAN: SO one of these four police officers that are around could put it into flash? Because that's all they can do. They can't change the timing. They would put it into flash. So it's now a three-way stop.

MR. MABERRY: I can't say for sure, but another option potentially would be for the city to have some kind of special event coordination. Some of the signals are very advanced to do that kind of thing. I would be speculating.

ED EHRMAN: They could be down. Because I don't think Yorba Linda has a system that could download a timing program to that intersection in that period.

The traffic counts in Agua, where were they done and when? I don't remember traffic counts being done on Agua at all.

MR. MABERRY: The roadway segment 2 counts were done -- some were done in May and some were done in October.

ED EHRMAN: You don't have to look it up right now.

MR. MABERRY: I'll give you my card.

ED EHRMAN: All right. The last thing is -- and I guess the reason I'm sensitive to this is because we're on Via del Cerro and to get out to Yorba Linda Boulevard you go Via del Cerro, Via del Puente, Via del Agua.

And it's like four car lengths between Via del Puente and Yorba Linda Boulevard. And to merge onto Via del Agua during the Freeway Fire was impossible.

And I guess one of my concerns is not only the fact that you can't get out of Via del Cerro, but also that people -- and somebody said this before -- you know, you managed the great thing, it's the people that screw it up. Because people when there's an emergency do things you wouldn't normally expect them to do.

And if they back up across Via del Agua trying to get out of Via del Puente, then first responders aren't going up Via del Agua or will be delayed in getting up Via del Agua.

So I don't think the signal is necessarily the right thing to do and I don't see a signal being able to help getting out of Via del Puente onto Via del Agua.

You want to comment to that?

MR. MABERRY: Well, relative to the congestion at that location during an event, we talked a little bit and I think that that warrants some input to the developer or whoever is going to administer the plan. And that's a concern.

Relative to a typical day situation, it's a public street. And what typically happens when there's queuing at a signal -- and understand the signal is a mitigation measure in the report and it doesn't necessarily obligate the county or the city to require it as a condition of approval.

If they deem that they're better off without a signal, they certainly don't have to require it. But I think that that's an option that they likely would investigate since it would probably be a mitigation measure.

ED EHRMAN: I think they need to look at it as an option.

MR. MABERRY: But if there was a que on Via del Agua as a result of the signal, I think a typical situation would be some kind of keep clear striping to protect the intersection so movements could be done on a regular basis.

ED EHRMAN: Have you ever to Rose and La Palma, the keep clear? When people are going to go around the corner and there's no place to go it -- whether it says keep clear or not -- and think about this during the fire like the Freeway Fire, do you actually think that people would -- we would hope they would -- but people are people.

And they're trying to get out just like everybody else is. And if you can't get onto Via del Agua in the four car lengths that it takes to get to Yorba Linda Boulevard, what would you do?

MR. MABERRY: Well, in my opinion during an event, they probably wouldn't respect that. But my comment was relative to the traffic study we're talking about a typical worst case situation or like a congested time of day. Relative to an event, I can't comment either way. I'm not sure what I would do. It would be speculation anyway.

ED EHRMAN: Okay. That actually -- again, this lady -- oh, she's gone. Her slides were actually outstanding because it really showed what took place.

KIM PAUL: I'm here.

ED EHRMAN: Those were great. They were good and everything everybody else said was excellent. We didn't want to make this adversarial because that's not what it's about. We understand you're in business and you want to make some money out of this and you want to do some things, but we're only concerned about the impact that it has on us with our experience from what happened during the Freeway Fire.

MR. WYMORE: I understand. I appreciate the fact that you showed up and I appreciate the fact that you let me make my presentation when a lot of you didn't really want to hear the presentation, but -- and I appreciate the fact that you come up here and you give me these comments.

And like I said, if you want to meet with me outside of the meeting, I'll be glad to meet with you outside of the meeting. I do appreciate the fact you showed up. I think it makes for a better deal.

Just like after August 2012 when you came in with a lot of things, that changed a lot of things about this project. Just as many other agencies and other people have come in and said what about this and what about that. And just as some of your city councilmen have said well, we don't like this or we don't like that or go look at this or go look at that. We don't know what we're going to do next. Take a look at this. Take a look at that. We've done that.

And I think those things make for a better project. The more interaction you get I think it gets better. That doesn't mean you're going to like it. It doesn't mean that we're going to agree. But at least we move to a better point. So I do appreciate it.

MS. McCARTHY-WATERS: Okay. Our next speaker is Mark or Marg Garvey.

FROM THE AUDIENCE: I think she left.

MS. McCARTHY-WATERS: She's left.

Okay. The next speaker is Scott and I can't read the last name.

SCOTT KIRBY: Kirby.

MS. McCARTHY-WATERS: If you could repeat your last name for her that would be great.

SCOTT KIRBY: Sure. My name is Scott Kirby. I live at 4785 Via de la Roca in Yorba Linda. I've lived there since '93 or '95 or something. I'm a good republican. I believe in personal property rights. I'm not a tree hugger. I'm not a hill hugger.

But I've got some questions and first thing I'd like to do is give some props to people in the room. I give props to you. This is much better than the other developer we had. So thanks for taking the heat. I appreciate all your experts.

I want to thank Ken Ryan because Ken and his posse of ten people saved my house back in that fire. And the reason they were there is because there were no firemen and when the firemen that did finally show up, they were from Orange and Santa Ana. They weren't from around here. So that's something to keep in mind.

I had three questions regarding slides. I don't know if we can still get the slides up.

You have one slide up there that showed the entrance. That entrance is directly right off of Via de la Roca and Agua. It's awful flat in that picture. What's there is not flat.

So there's going to be a remarkable amount of --

MR. WYMORE: I'm sorry, Via de la Roca and --

SCOTT KIRBY: Agua.

Is that your entrance?

MR. WYMORE: No.

SCOTT KIRBY: Okay.

MR. WYMORE: But that's where my emergency would go through. I can answer your question.

SCOTT KIRBY: Okay.

MR. WYMORE: All right.
SCOTT KIRBY: So we'll get back to that one.
MR. WYMORE: Okay.
SCOTT KIRBY: So we have serious questions about the amount of dirt that's going to be moved and how long it's going to take to move that dirt because every depiction I see shows this wonderful flat space and that's not flat.
MR. WYMORE: Okay.
SCOTT KIRBY: There's a -- there's a creek there.
MR. WYMORE: All right.
SCOTT KIRBY: There's hillside there and most of the depictions I've seen tonight are showing flat. So there's going to be a lot of dirt moved.
MR. WYMORE: There's -- I can hit that really quick if you want.
SCOTT KIRBY: Okay.
MR. WYMORE: We have a 50 foot easement right to go through there, which is why the only thing that we've got going through there would be the emergency exit. They contest that. So we're in court to determine that.
Assuming that we would go through with a 50 foot emergency exit if Cielo Vista is built, then we would hope to work with them to determine, you know, to

hook into their roads and then they would be coming across.

If we don't work with them, if they determine not to go forward with their project or we build earlier, then we would bring our road down -- we would have to go through that hill back there -- and then our road would be flat and it would follow the existing road. In other words, it would just go down and come out because again it would only be used for emergency purposes.

If Cielo Vista is built, then that road has to be built over the easement. As you know, Metropolitan Water District has a large pipe there and as part of their easement, they have a restriction on how much overburden you can put on there. And they also have a restriction against any kind of building over it. So that would be something that you would have to resolve with Metropolitan Water District.

SCOTT KIRBY: I would have to resolve that?

MR. WYMORE: No. We. Us the developer. You don't have to resolve anything. You can just come in and say I don't like it and turn around and leave. I have to resolve it. As the developer, that's what we have to do.

So it's something we would have to go

through. For instance, if we were the developer on that piece or if we were doing something in conjunction with them and their grading plan that I've looked at is just a review grading plan, but, yeah, there's a lot of dirt moving on our property. It's moving away from the homes, but there is still going to be --

SCOTT KIRBY: So there's a creek there not just a pipe?

MR. WYMORE: There's a creek there.

SCOTT KIRBY: So there would have to be massive some kind of bridge or overpass or something like that.

MR. WYMORE: Okay. If you look at the Cielo Vista draft EIR and if you look at the biology report, you'll see that in that particular area there's Least Bell's Vireo there. So you have to mitigate whatever you disturb, meaning you have to replace it a one to one, two to one, or whatever it happens to be.

And then in addition to that going through that area you would have to raise that area so it would be flat. Our civil engineer Ken looked at it.

He's talking about the entrance to Cielo Vista and what they would need to do.

Can you answer that question?

SCOTT KIRBY: There's a creek there. So you just said you're going to put in two creeks instead of one?

MR. WYMORE: No, there isn't -- it's the end of Blue Mud Canyon coming around and again those are jurisdictional waters that would be subject to Army Corp of Engineer jurisdiction.

So you would have to go in with a plan and say, okay, this is what I want to disturb. Now I've got to mitigate that so you're going to have to show them where you're going to recreate that. In that particular area it's problematic because that's where Blue Mud Canyon drains to.

SCOTT KIRBY: Yeah, we noticed that.

MR. CRAWFORD: In the review of their plan there's an existing storm drain that drains Blue Mud Canyon and the inlet to that, if I remember correctly, is about 50 to 60 feet from Via del Agua. And in their plan they call for the extension of that roadway and they would need to extend the storm drain pipe along with that roadway to a point where they could drain the rest of Blue Mud Canyon.

And they're planning on filling in that area there and filling it about 20 some feet or so something along those lines, sir.

SCOTT KIRBY: Okay. So if Cielo Vista is not approved, that is not an emergency exit for your development?

MR. WYMORE: If Cielo is not approved, we would still use it as an emergency exit, but only if we couldn't get option 2B. If we got option 2A or 2B, then the emergency exit for 2A would be the existing road that's a dirt road going in would be paved to put a bridge across and that would be going out to Stonehaven, but it would be emergency only.

If it's 2B, then there would be traffic going down to Stonehaven and there would be traffic going out and we wouldn't necessarily -- we wouldn't probably need any emergency road going through Cielo Vista, but once Cielo Vista is built then the Orange County Sheriff's Department would want an evacuation road.

So they would want us to connect into their orders as an additional emergency exit so they could go into ours or we could go into theirs.

SCOTT KIRBY: Okay.

MR. WYMORE: As I understand it.

SCOTT KIRBY: Okay. So --

MR. WYMORE: Now I'm speaking for a lot of people that, you know, are going to tell you I can't speak for them and they're absolutely right.

SCOTT KIRBY: I get it.

MR. WYMORE: Okay.

SCOTT KIRBY: So your -- one of the other questions I had was the traffic study. There's been a lot of questions about it. I didn't -- I wish we could see the slide, but I don't -- I don't recall seeing on the slide -- I saw the 1200 trips a day current on Agua and --

MR. WYMORE: I am going to get that slide.

SCOTT KIRBY: Good, good.

So is there a -- if I'm reading this right -- existing traffic on Agua, for example, 1112 trips a day.

Do I understand that?

MR. MABERRY: That's correct.

SCOTT KIRBY: And then modified capacity meaning it could absorb 6250 transcripts a day?

MR. MABERRY: Yes.

SCOTT KIRBY: And then is there a column up here that shows if everybody left all at once? If you had 800 homes that evacuated at once, was that traffic part of this traffic study?

MR. MABERRY: No.

SCOTT KIRBY: Okay. That's all -- I just wanted to hear that.

MR. WYMORE: Come on. Let him -- I made him do this. You're going to have to let him answer the question.

MR. MABERRY: I did -- in anticipation of discussions relative to the evacuation plan, I did estimate the number of homes that would essentially if you were to say everybody go now and everybody was home and everybody had two cars I did kind of look at what that number would be. And then --

SCOTT KIRBY: Okay. You just said you didn't, but you did you include that in your traffic study, did you, or did you not include a mass evacuation all at once? Is that included in any of these numbers up here?

MR. MABERRY: No.

SCOTT KIRBY: You know I saw -- the last thing I saw was the video. It's a very nice video. I'd like to live next to those houses. That would be good for my property I'm sure.

But I just heard you say that there is no builder for those homes. So those homes are theoretical. We don't know that those homes are going to look like that; correct? I know that the lot sizes are zoned for that.

MR. WYMORE: I'm not going to have any problems selling them. I mean I've got builders interested in doing it.

SCOTT KIRBY: But if --

MR. WYMORE: The problem is that there's no point in me trying to enter into a contract with a builder today. There's lots of builders that will enter into contracts with me and then they'll say well, I want to do it at this price and then you go solve all the problems, but you know, is that --

SCOTT KIRBY: I understand. But I saw a video that had massive Italian looking homes. They were beautiful. I'd like to live in them.

These things look like they were 5 and 6 and 8000 square foot homes.

MR. WYMORE: No.

SCOTT KIRBY: You don't have anybody that's said they're building that?

MR. WYMORE: What we did -- what we did in the models is we set the homes up at 45 to 5500 square feet and that's what you saw in the video. And the homes that were done were basically done off Toll designs that are being built in Eastern Yorba Linda.

MS. McCARTHY-WATERS: Any more questions because we're well over the three minutes?

SCOTT KIRBY: Okay. So the point is that we don't -- you could get this approved -- and to I think the earlier question -- we don't know that the houses that are going to be built on those lots are going to look like these houses. There is no guarantee.

There is no builder. There are no houses that are set out there because, you know, with all due respect, like you said, you don't have it approved so you don't have anybody, but everyone in this room should understand that there is no guarantee that those houses that you showed in the video is what is going to be built up there.

MR. WYMORE: Not those specific ones, but we have specific guidelines as to what can be built up there and they're going to be very similar to what you saw.

SCOTT KIRBY: Okay. So with that I have three observations.

MR. WYMORE: Okay.

SCOTT KIRBY: I think Orange County Fire Authority, number one, is anything that they -- if you're using them as your credible source that's going to validate this, there's nobody -- there's not many in this room that consider Orange County Fire Authority as a credible source.

They came and spoke at Yorba Linda City Hall in the postmortem and I watched that and I saw the chief come up there and if I hadn't lived here and didn't know, I would have thought everything worked perfectly. And then some 200 families got up and half of them in tears and got the real story.

So not to mention the credibility problems they have now with the inspections that they've charged people for that they didn't deliver so that's not a credible organization.

You know, the second assumption that you make is that your houses will not burn and this will be a firebreak. You know, in a hell fire of 70 mile an hour winds, dark smoke and ashes, if you watched Glendora this morning -- and I was watching. And that fire broke out in the dark at 5:50 in the morning in the dark and there was no fire people up there.

I'm sure it wasn't as well planned as yours, but it's hard for people in this room to believe that the firebreak -- that that's going to be a firebreak. That those houses will not burn.

So that seems to be a rudimentary foundation of your discussion and, you know, at the end of the day most of this is built around the evacuation plan that we've all talked about. Your own expert, who was very good, said a key point was to make sure that no people were involved. The best plan included no people.

Okay. That means roads. That means not chained ingress/egress emergency roads. Who is going to be up there at 5:50 in the morning with a key to unlock a chain five years from now, six years from now, seven years from now when my grandmother carrying my kid at 5:50 in the morning is trying to weave her way down a 70 mile an hour windstorm in the dark with a fire burning.

And you won't be there. None of these people here will be there to say, well, I don't know what happened. Okay. And that's what this whole thing is built on.

So if you want an evacuation plan, it should have streets and roads that could accommodate the people and we don't have those now. You need a road that connects to Esperanza. You need a road that connects to Bastanchury.

And if we were talking about building 25 houses that were $5 million bucks a piece, these people wouldn't be in this room homes. But we're talking about 500 homes. So you need to make the investment in the infrastructure that's going to connect those roads going out to different areas, not onto Stonehaven, not onto Agua.

Thanks.

MS. McCARTHY-WATERS: Thank you very much.

We really need to keep the questions to

three minutes. I stop the clock when you're getting answers because that's not fair, but let's try to think the questions through so that they're real concise.

The next person is Ken Newman.

KEN NEWMAN: Good evening. I know it's getting late. I'm Ken Newman. I live on 4580 San Antonio. I'm about halfway up as you go up the road. I am going to be definitely affected either front or back of my house it sounds like.

I just want to talk about some things just to piggyback on what he was just saying about the entrances and exits. I agree with them him.

I'm in the petroleum industry and I'm trained in emergencies. And we have weekly drills and those type of things and I'm part of the instant command and all that. I'm an engineer so I understand petroleum real well, been doing it all my life.

I've got lots of things to talk about about that canyon. First of all, I agree what that gentleman is saying about the entrances and exits. When we have to evacuate, we go upstream, we go sideways. We don't go downstream with the fire.

The question I have is what wind speeds did you calculate coming down San Antonio? When you're talking about a road, behind the houses or in front of the houses? Where did the traffic come out?

When you're evacuating with the wind direction, did you plan on 70 mile an hour winds with fire in them?

MR. HUFF: The model used the wind speeds from the Freeway Complex Fire, the sustained and the max wind speed.

KEN NEWMAN: We have had 70 mile an hour winds. I lived through that fire. I was there when it was burning. And I was there for 24 hours putting fires out every around me. There was 18 homes right around me that I watched burn, no firefighters.

Okay. It doesn't make sense to try to send people down a road that's on fire. Right?

MR. HUFF: That's not -- if you're evacuating at that point, you've -- you're too late.

KEN NEWMAN: Right. I was too late. I came back into my home because my dogs were still in the backyard. I had to go get them. My wife didn't have her purse. We didn't have any of our belongings with us. We had to come back into our house.

I followed the flames down San Antonio. You could not cross San Antonio. Flames were jumping across the road. Don't count on that as your exits. I saw the first house, Thayer's house right there at the first, it was shooting flames from his home across San Antonio all the way to the next hill. You could not get out that way. People had to go up the other way.

Did you guys study going to the other direction towards Fairmont because that's the direction you need to go? You don't go west. You gotta go east.

MR. WYMORE: When we looked at the evacuation plans and we ran over them we looked at going two different directions. When you go to San Antonio one direction you can go is north and then out Fairmont and the other direction you can go is down Yorba Linda.

I don't know what the actual evacuation was that day, but when you're asking us what did we look at? We looked at everything. We even looked at the road that's on the Metropolitan Water easement between Hidden Hills coming down to our property that they call an evacuation road because as you know that's going to be covered by fire and you're going to have panicked people and you can drop off either side. So we've looked at everything.

KEN NEWMAN: When I came back home, thank God that I got held up on the police block 20 minutes and that's when the canyon burned. When I tried to come back up San Antonio, they wouldn't let me near -- they said that the street was on fire.

There's no entrance or exit out of San Antonio during the fire. You've got the 70 mile an hour winds with the embers and everything else and houses on fire. It's not going to change. It's going to happen again.

MR. WYMORE: Well, I disagree with the change and the reason I do is because if you are handling fuel modification in Blue Mud Canyon -- let's say Cielo Vista is Built. Okay. Cielo Vista is built. So that's going to remove fuel from that fire.

Then you're going to have fuel modification from us. And so the fire is not going to continue through just like our models show.

KEN NEWMAN: I disagree with you. Why --

MR. WYMORE: Well, I understand.

KEN NEWMAN: -- I disagree is because embers fly -- today in the Glendora fire they had embers flying a half a mile and starting fires. They hit here. They hit Yorba Linda like that. They hit this section. They hit that section.

No matter what you do up on that hill it's not going to help us. You're still going to have embers shooting down at us.

MR. WYMORE: There's no doubt that you're going to have embers. That's why I kept hitting embers. Embers are the problem for you. Even if we go in there, you still have embers and the embers are going to enter homes that were built before 1995 without a doubt. That's the problem.

There's steps that those people can take because the embers were -- the ember storm in this particular fire was a mile high I heard. So it's going in and some houses burned two days later because people were out of there. They came back in and the embers started then.

KEN NEWMAN: Okay.

MR. WYMORE: But I don't agree with you for the reasons I've cited and I'm not going to argue with you, but I don't agree with you.

I think that even if we do 2B going down, 2B going down is going to affect the fuel through that canyon and I think it will make it safer.

KEN NEWMAN: Now I'd like to talk about the canyon.

MR. WYMORE: Okay.

KEN NEWMAN: Do you know what goes on in that Canyon?

MR. WYMORE: I'm not out there every night.

KEN NEWMAN: Okay. You know what roll processing goes on there?

MR. WYMORE: The what?
KEN NEWMAN: Live oil wells out there working?
MR. WYMORE: Yes, sir. I'm very familiar with all those wells.
KEN NEWMAN: Okay. Were you aware that the vapor recovery ruptured during the fire and it was shooting flames out of that?
MR. WYMORE: I'm aware --
KEN NEWMAN: I was there that whole night when those flames were shooting out and we got it blocked in. It was like a blowtorch.
MR. WYMORE: I've never talked to Yoland, which has the well site closest to your deal, but I talked to Santa Ana Canyon Development. I understand what happened to them and I understand what happened to Darco.
Darco I'm in a lawsuit with because he hasn't been producing and I want to get him out of there, but if he stays then he's going have to stay with a lot more safety features in place.
KEN NEWMAN: What about all the gathering lines when you start to work on the road behind us?
MR. WYMORE: I'm sorry?
KEN NEWMAN: What about all the oil gathering lines that lay on the ground in Blue Mud Canyon? I'm

on San Antonio.
MR. WYMORE: Oh, that was our challenge in designing 2B. In other words, when we were going through designing 2B, we had to be able to, A, miss Mr. Yoland's tank farm, --
KEN NEWMAN: Right.
MR. WYMORE: -- avoid the pipe for that large two line transmission pipe that feeds, whatever, 14 percent of the L.A. Basin or more, and also turn around and make arrangements to not disturb those pipes or relocate those pipes. We did all that.
KEN NEWMAN: The transmission lines is not what I'm getting at right now. I'm talking about the natural gas small gathering lines that come off the oil wells.
MR. WYMORE: What I'm saying is --
KEN NEWMAN: They're right on top of the ground.
MR. WYMORE: -- we can mitigate those lines by relocating those lines.
KEN NEWMAN: Are you aware what happens in a major rainstorm, what happens to that canyon?
MR. WYMORE: Today?
KEN NEWMAN: It fills up completely with water.
MR. WYMORE: Our understanding --
KEN NEWMAN: All the way from the top of the hill

all the way across.
     MR. WYMORE: We've done a drainage study that goes through that canyon to determine what we would need to do and that was part of our design for the road going to 2B.
     KEN NEWMAN: Now let's talk about the transmission lines.
            You know the sizes of them?
     MR. WYMORE: You mean the large ones that are Southern Cal Edison?
     KEN NEWMAN: Right. Southern Cal Gas. There's a difference.
     MR. WYMORE: Oh, the two large ones that go to Southern --
     KEN NEWMAN: Right.
     MR. WYMORE: -- Cal Gas?
     KEN NEWMAN: Major --
     MR. WYMORE: I'm very aware of them.
     KEN NEWMAN: Major transmission lines.
     MR. WYMORE: I've talked to them.
     KEN NEWMAN: 30 inch lines.
     MR. WYMORE: That's correct.
     KEN NEWMAN: They cover one-seventh of the L.A. Basin's natural gas capacity.
     MR. WYMORE: That's correct. And that's why we

had to design option 2B so that we avoided those lines and we didn't put any grading down on their easement. And we did that.

KEN NEWMAN: Are you aware of San Bruno and the fire they had up there when someone nicked the lines several years ago?

MR. WYMORE: No, I'm not.

KEN NEWMAN: Major catastrophe, about five years ago. Took out a good portion of several blocks, major fire.

Are you familiar with the Olympic pipeline up in Washington state in Bellingham where a line ruptured after a backhoe rubbed the insulation on the line and then some years later it ruptured?

MR. WYMORE: If your point is that dealing with gas lines is a very dangerous deal and particularly those gas lines, we got that a long time ago. That's why we met with them, that's why we talked with them, that's why we're running plans past them, and that's why we didn't want to go through what we call option 2A initially because it took us four passes to be able to go through and figure out a way to get around it to avoid that very problem that you're talking about, but we did.

KEN NEWMAN: I just do not want people digging around pipelines and some years later we have a rupture.

MR. WYMORE: We don't need to dig around the pipelines. We can avoid the pipe lines. The Gas Company has made it very clear that you're not going to be digging anywhere around our gas lines. That wasn't the challenge so much.

The challenge so much was that you also can't put any dirt on top of those lines.

KEN NEWMAN: That's right.

MR. WYMORE: So you've got to design a system where you can get up away from those lines and then have your roadway come down so that the road that comes off of it and the grading that comes off of it is still safe enough to be approved by the Gas Company.

KEN NEWMAN: I don't think there's enough room because their easement is pretty wide.

MR. WYMORE: Well, I think there is.

KEN NEWMAN: The other -- you talked about the Metropolitan Water District. They have their eight-foot diameter line across the San Antonio and you have that issue. That's another thing that was on here.

MR. WYMORE: We're not going to be disturbing that.

KEN NEWMAN: Okay. Then --

MR. WYMORE: We come in just north of that.

KEN NEWMAN: Then there' -- I remember I was coming back home that day of the fire and looking down and I was standing out there and I wished I had a fire hydrant and a fire hose. And got to looking at it and, you know, the fire hydrants are all across the street from us. They couldn't even use the fire hydrants if they wanted to. We would be blocking San Antonio road with the fire hoses.

If you ever looked at it, it's on the north side or on the west side of all those homes. It's opposite the homes is where all the fire hydrants are. So we're not protected now.

MR. WYMORE: I understand. I haven't been in your neighborhood and looked at that. But I know that specifically with regard to our fire hydrant design we ran it through our civil engineers and we've also run it through Mr. Huff's company and we've also run it through OCFA.

And we're putting in more hydrants than we need to because of the fire staging areas and everything that we talked about earlier.

KEN NEWMAN: It doesn't solve the problem we're going to have, you know, if you wanted to use the fire hydrants if you've got a fire in our area. And that's part of your evacuation route. The fire hoses are across that. We're going to be putting fire hoses across the evacuation route. That needs to be looked at.

MR. WYMORE: Okay.

KEN NEWMAN: As I said before, I really agree with what the first gentleman said here right before me was that you need to look at your east and west, you know, escape routes and ingress/egress and whether to try to go down San Antonio.

I think you're making a mistake going right into the line of fire and the wind direction and that really needs to be considered. If you would just take that into consideration, I would sure appreciate it.

MR. WYMORE: Okay. Thank you.

MS. McCARTHY-WATERS: Thank you, very much. Thank you.

We've got four people and I appreciate the four of you for being so patient.

Rob Carrillo, is he here?

ROB CARRILLO: I'm Rob Carrillo. I live at 21100 Ridge Park Drive. I'm off of San Antonio up on the hill.

Actually I saw the whole fire from the start to the finish. I lived through it. I stayed 24 hours -- up 24 hours, fought fires around the houses around my property, put out some of my own property and existing neighbors, saw a few neighbors' houses go down.

The problem I have -- question I have I guess on the traffic study the problem I'm getting -- I'm having a problem dealing with is the San Antonio traffic study.

How many days did you do that and when was it done? How many days did you do the traffic study?

MR. MABERRY: The traffic counts, just one day.

ROB CARRILLO: You only did it for one day?

MR. MABERRY: Correct.

ROB CARRILLO: Is there a reason why one day or two days some hours -- and what day of the week was it?

MR. MABERRY: I'll have to check my appendices and I can tell you the date.

ROB CARRILLO: The problem I have --

MR. MABERRY: I can provide --

ROB CARRILLO: Yeah.

MR. MABERRY: -- it to you, --

ROB CARRILLO: Yeah.

MR. MABERRY: -- but the --

ROB CARRILLO: The numbers that are coming out now is like 3500 and then if you get the option B, which it looks like what you guys are pushing for and or this option 2 -- what is the difference between option 2 and option 2B?

MR. WYMORE: Option -- I could -- go ahead.

ROB CARRILLO: Because option 2 is actually more traffic.

MR. MABERRY: Correct. Option 2 is an access to Aspen Way. That's the only -- that's the primary access for all the residents. Emergency is down San Antonio.

Option 2B is a combination of resident access to San Antonio about 800 feet south of Aspen Way and also to Stonehaven.

ROB CARRILLO: Okay.

MR. MABERRY: So 2 is all to San Antonio. 2B is a combination between the --

ROB CARRILLO: In the traffic study did you take into account the left-turn lane off of San Antonio off of Yorba Linda Boulevard turning into San Antonio?

MR. MABERRY: Yes, we did.

ROB CARRILLO: Because there's only a four to five car niche in there and you can't extend that because the other left-turn lane behind that turns into the other street off of Yorba Linda Boulevard. That cannot be expanded.

MR. MABERRY: See --

MR. ROB CARRILLO: The problem what you may run into here is you maximize that at four to five cars now and then you get another 1,000 cars coming or you got another 3,000 trips coming through, that's going to pull out into the main traffic of Yorba Linda Boulevard. You can't expand that turnout lane. It's physically impossible.

So I guess was that taken into account as well?

MR. MABERRY: Yes.

ROB CARRILLO: So what are you going to do to fix that?

MR. MABERRY: We analyzed the que at that location in order to --

ROB CARRILLO: How many cars?

MR. MABERRY: I'll have to look that up. But there is a figure 17.3 in the traffic study that does show a physical extension of that pocket. It can be extended.

ROB CARRILLO: Are you going to go behind it? It's not possible because there's another turnout behind it going off to the other street going to the left.

MR. MABERRY: Right. There's a median --
ROB CARRILLO: This is not possible.
MR. MABERRY: There's a median there that can be extended. It's about half -- the pocket is about half the distance between those two roads and there's a modification -- there's a figure in there. I can show it to you.
ROB CARRILLO: There's a turnout. There's another road that you have to turn left into. So I don't know how you're going to do that. Are you going to do away with the left turn?
MR. MABERRY: Are you talking on San Antonio to the west?
ROB CARRILLO: No, I'm talking Yorba Linda Boulevard -- yeah. Right by the fire station.
MR. MABERRY: Correct.
ROB CARRILLO: That turnout right there.
MR. MABERRY: The eastbound left-turn pocket.
ROB CARRILLO: Yes -- northbound.
MR. MABERRY: No, the eastbound. It's semantics.
ROB CARRILLO: Yes.
MR. MABERRY: Traveling eastbound to go north?
ROB CARRILLO: Right.
MR. MABERRY: Right. There's a road to the west that's a --

ROB CARRILLO: Right by the fire station.

Okay. But behind that there's another turnout to go into the neighborhood right to the left. They can get through now.

You're going to take that away or how is that going to happen?

MR. MABERRY: We're -- one of the -- one of the -- I won't say it's a mitigation measure. It's a recommendation under option 2 is to extend that left-turn pocket.

ROB CARRILLO: So you would cut out the access for the people wanting to turn left?

MR. MABERRY: No, that doesn't change anybody's access. It's just going to extend the queuing storage for that lane.

ROB CARRILLO: To how far? I don't think there's enough room to do it.

FROM THE AUDIENCE: (Inaudible.)

MR. MABERRY: That's correct. The median will be modified.

ROB CARRILLO: And to how many cars? Right now it's maybe only four to five. But if you have this extra traffic coming down there, it's going to really impede Yorba Linda Boulevard and then you're going to have potential accidents, which is what I'm looking at.

And also the San Antonio is just not wide enough, I feel. It's actually the -- San Antonio -- I feel sorry for anybody living on San Antonio because the city actually put in that narrowing feature. That's that little grass in the middle of the --

MR. MABERRY: Yes, I know.

ROB CARRILLO: They actually added that to slow the traffic down. So when they did add that, --

MR. MABERRY: Correct.

ROB CARRILLO: -- they took away the downhill parking for anybody on San Antonio. They cannot park on the downhill side. So if they park in front of their house, I don't know how these construction vehicles are going to get through there with the narrowing feature. And if they park in front of their house, I don't see how it's going to be -- it's going to a mess for any kind of construction vehicles going through there getting to your development. It's just my observation.

MR. MABERRY: And we're talking about that traffic going through there --

ROB CARRILLO: There's a couple of them.

MR. MABERRY: -- and the lane width is adequate to accommodate construction vehicles. Construction vehicles are at most nine feet wide, ten feet wide. So

I think there's enough room for them to get through.

ROB CARRILLO: If someone parks a guard by their house?

MR. MABERRY: I don't --

ROB CARRILLO: Or are they going to take away their parking in front of their house on the street?

MR. MABERRY: I don't know where the parking is intended for them.

ROB CARRILLO: Yeah.

So that's just -- so that's a problem I had is with the option 2 on San Antonio, there's just not enough because it's going from 3500 to 6400 and possibly 7600 trips. And you only did the study for one day and you don't know what day.

I think it should be done for more than one day. It should be for an average. You should do it for three or four days or do it for like a week. And why don't you do that? Why don't -- I mean I don't know why wasn't it done. Was that not normal or --

MR. MABERRY: I can answer all of those questions.

And I do know what day. I just have to look it up. So I was trying to pay attention to your other questions.

ROB CARRILLO: Oh, okay.

MR. MABERRY: The requirement --

ROB CARRILLO: Even another couple of --

MR. MABERRY: The requirement is that you do it for one day. Some cities require multiple days.

ROB CARRILLO: But you guys want to go above and beyond?

THE REPORTER: Okay. Would you like me to take down what you have to say or not?

ROB CARRILLO: And who are you?

(Off-the-record discussion.)

ROB CARRILLO: Okay. Just a couple observations that I had.

I Know your property looks like it's going to be bullet prove and then fireproof, but I think what's going to happen is you guys will get up on this hill and this fireproof compound and then what happens if the houses down on San Antonio catch fire and then you can't get out because you're going to be stuck up there because there's going to be fires on San Antonio or other properties -- or the other houses that don't have your standards.

So they're going to be choking your access points to leave the property because that's where all the fire trucks will be. That's just an observation that I had.

And then --

MS. McCARTHY-WATERS: Okay. You're way past your three minutes.

Can you wrap it up?

ROB CARRILLO: Can you answer the question?

MR. MABERRY: I can answer the question on the traffic count. It was -- the tube count was placed on Wednesday, May 30th, 2012.

ROB CARRILLO: The whole day or the --

MR. MABERRY: 24 hours.

ROB CARRILLO: Okay. With a guy with a clicker or what was --

MR. MABERRY: It's the tubes in the roadway.

FROM THE AUDIENCE: Some high schools are out by then.

ROB CARRILLO: I never saw them. I never saw the strip.

MS. McCARTHY-WATERS: Okay. We've got three more speakers here.

ROB CARRILLO: That's about it.

MS. McCARTHY-WATERS: Is that it?

ROB CARRILLO: Yeah.

MS. McCARTHY-WATERS: Okay. Thanks very much.

Bob Kanne, K-a-n-n-e.

BOB KANNE: Hi, I'm Bob Kanne. I've got about seven questions.

I'd like to start with traffic. We were talking about that.

Option 1 the main way in is to come off Stonehaven and zigzag down to Blue Mud and back up out of the canyon. There's two hairpin turns.

Since this is the main access road in option 1, what's your recommended speed as far as going through those two hairpin turns, one going over the ridge and then the other diving down to the bridge at the bottom taking two -- making two 90 degree turns there? Do you have a recommended speed? It seems like that's kind of an important thing since this is your main access road.

MR. MABERRY: Okay. I believe you're talking about the one that's going to be improved on site essentially.

BOB KANNE: It's certainly a dirt road that connects to Stonehaven.

MR. MABERRY: Okay. I'm not sure what the design speed on that would be, but I would anticipate, you know, 25 to 30 miles an hour.

BOB KANNE: Okay. In an evacuation you're going to have people trying to go through those hairpins as quick as they can.

In general, who will be responsible for the car accidents that happen at those hairpin turns when kids and other people are just going fast and don't make the curb or go off the cliff into the ditch in Blue Mud.

I understand this is a private gated community -- right -- but that's outside the gate? Is that going to -- are they going to sue the homeowner's association or are they going to sue the County or are they going to sue the City if the City takes over?

MR. WYMORE: They're not going to sue anybody if it's done right because it will probably be their own negligence if they decide to run off the road.

But the bottom line is that the roads will be maintained by the HOA, but the laws will be enforced by the Sheriff's Department just like it is anywhere else. It's not a private police force.

They'll be designed to go for a particular speed. And if necessary then if things got out of hand, then they would have the right to go in and put speed bumps or whatever it would take because, again, they're going to be privately maintained roads.

BOB KANNE: Let's see. Can the traffic engineer show me a similarly tight curve somewhere in the city or somewhere nearby and what the warnings are for a similar hairpin turn?

MR. WYMORE: We didn't bring any designs for any other things in the city.
BOB KANNE: Yeah. It's remarkable for the main access road to have those two sharp turns and I can't imagine who would want to be on the board of this HOA and take the responsibility and the liability for the hazards that are being created by this proposed development.
Let's see. Let me go to the traffic slide that Mr. Kirby was talking about with -- I forget his name.
MR. WYMORE: Mr. Maberry.
BOB KANNE: I spent ten minutes looking in the document for that and I couldn't find it and the lady spent another 15 minutes or so looking for it.
Is that page in the document?
MR. WYMORE: No, that's a page that I put together and he put together that took the numbers from various sections throughout the document. So what we did was we took numbers that were in the document and put it into that chart so it would be something we could show you all at once. Otherwise --
BOB KANNE: The stuff in the document is quite confusing.
MR. WYMORE: I understand. I'm trying to get it

in a fashion so you could understand it quickly. So I took it through.

What he did was he analyzed option 1, option 2, option 2A, and option 2B, and he had to hit those numbers with each one. I wanted to get something that I could show you that would be very easy to see quickly.

BOB KANNE: Could this PowerPoint be on the internet so -- I couldn't find those numbers, the numbers that were in the document.

MR. WYMORE: Sure. I'll be glad to take this and see what I can do about getting the PowerPoint posted.

BOB KANNE: Okay. The 1966 vehicles per day on Stonehaven, the 1100 on Agua, and 3530 on San Antonio. I couldn't find the numbers in the document, so.

MR. WYMORE: They're difficult to find because you have to go through the options which is why I created the chart.

BOB KANNE: Okay.

MR. WYMORE: And I will try to make the PowerPoint available to you.

BOB KANNE: Okay. Let's see. I don't understand why you only brought one copy of planning document.

How many of the full documents have been printed up and how many are available at public locations?

MR. WYMORE: I only brought one copy of the complete technical appendices because I didn't anticipate that there were going to be 100 people going through it and there haven't been.

As far as making it available, everybody who made an NOP comment was sent an copy of the EIR on a CD -- you probably as well.

BOB KANNE: Yeah.

MR. WYMORE: That's right.

And then in addition to that, I've had neighbors e-mail me and I've sent that out to them. In addition to that, I believe it's online at the County and it's online at the City.

BOB KANNE: Okay. I was just asking about hard copies.

MR. WYMORE: Hard copies. There's hard copies available that were set up on the notice that we sent out. I think there's one at the Yorba Library. I think there's one at the City of Yorba Linda. I think there's one at the County. I'm not sure how many other locations to be honest. I know about those.

BOB KANNE: The screen that was up here for a long time showing the entrance gate. The whole video was pretty unrealistic. The entrance gate doesn't have a gate and it shows cars just driving through. My understanding is we can't just drive through.

The road that was shown was wide enough for two cars to park or a car to park next to the car that's driving, but I'd like to know where is the public parking for the access to the equestrian trails, hiking trials, bike trials, sidewalks.

Where is that for the option 1 and other options or does it not exist?

MR. WYMORE: There's no public parking on site. If there were access to trails and we went with 2B and put in the park, then there would be public parking off of San Antonio in that park down there.

BOB KANNE: Way down in the lower elevation for parking on Stonehaven and walking up all the way from Stonehaven. That's the only option.

MS. McCARTHY-WATERS: Do you have any more questions? You're way over your three minutes.

BOB KANNE: I'm almost done.

Well, I'm only -- what about their comments?

MS. McCARTHY-WATERS: No, I've stopped the clock whenever they're talking.

BOB KANNE: Let's see. I would like to get a show of hands from our experts how many are Yorba Linda residents? None. How many in live in Brea? How many

live in Anaheim Hills?
FROM THE PANEL: Placentia.
BOB KANNE: Placentia.
Okay. But generally speaking I still feel like you guys don't know Yorba Linda, don't know our community. Mr. Wymore still calls it Via de Agua when it's Via del Agua. I know you study your plan very thoroughly, but it's just -- I don't feel like the people making the plan have -- really know our community.
Let's see. Almost there. Yeah. Just a lot of the promises are being put on the HOA and the promises about fuel modification, the promises about flood control, about park maintenance, about landslide prevention, the pressurized water pipes that go underneath the earthquake faults, the sewer pipes that cross the earthquake fault.
I just -- how can you guarantee that the HOA will fulfill all of those promises?
MR. WYMORE: Because you write it up in a set of CC&Rs and legal documents and then that requires them to do certain things. And then you set it up for funding, you put in reserves, and then they have monthly fees that are due just like any other HOA.
BOB KANNE: I just don't see it really happening.

MR. WYMORE: Well, you know what, every one I've done happened and it did just fine.

MS. McCARTHY-WATERS: Thank you very much.

Okay. Our next speaker is Paulette Byrne, B-y-i-n-e or r-n-e.

Linda Miller.

(Off-the-record discussion.)

LINDA MILLER: Thanks for coming.

This is my first meetings for Esperanza Hills. I'm a resident on Via Corzo, which is right on the corner of Alder and San Antonio. My property backs down onto San Antonio.

And six years ago we were new to California, had no idea what Santa Ana winds were, had no idea what a California wildfire was like. We were glued to our TV watching the news coverage not knowing what quite to do.

Evacuation plans are a great thing to have, but when you're in a panic you do two things, including us, we tripped over our bag of valuables as we were running out the front door and left them behind.

And one of the things that happened was we saw the Thayer house explode into frames and as you said at that point it's too late to leave. Well, nobody told us that we were supposed to leave. We didn't know. We know now.

We made the right decision by going up San Antonio instead of down San Antonio and there happened to be a horse trailer coming down. And as we were screaming at them that they were running into the fire, she made a U-turn in middle of San Antonio and got stuck. So no traffic came up and no traffic was going down. I don't know how long that lasted for.

By the grace of God, the first guy who was stuck behind the horse trailer worked for Orange County Fire Prevention. He turned up on Via Alder, saw the fire hydrant on my property, hooked up a fire hose, and saved my house. The two houses right next door burned to the ground.

The first firefighter took four hours to get there and the only reason they came was because this gentleman's wife had called to say that she thought her husband was dead and they GPS'ed his truck and got my address.

When the fire department arrived, they threw him a second hose to hook up on the other side of the hydrant and they left. I don't know where they went.

But my real question for you is after six years of having the same homeowners insurance I thought as it's coming up for renewal that I would call to see if I could get a quote from another homeowner -- or another home insurance company and was shocked to find that Allstate is refusing to write policies in Yorba Linda, period. Mercury won't write. Safeco won't write. And -- just a second here.

It was AAA, Safeco, and Mercury flat out rejected me because I'm within 1500 feet of a brush area. So I gave up after that. That's four insurance companies that won't touch me so I'm staying with my current provider.

But what are these people going to do when they come in and they need homeowners insurance because everybody's living within that brush area?

MR. WYMORE: We checked on the homeowners insurance question because that was asked of us at the August meeting as well. And we've talked to a couple of different homeowners insurance who are willing to do homeowners insurance, but there are restrictions that go with it.

And, frankly, they want to see what we would put as far as fire safety features into our subdivision before they'll tell us what they'll write us. So I honestly don't have an answer to your question right now, but it's something that we were thinking about from the last time that we talked.

I think there's two or three providers that will quote it. The question becomes what's the cost, is it worth it, and how can do you things that will make it cheaper going forward.

LINDA MILLER: And are they accredited?

MR. WYMORE: Oh, yeah. They're larger insurance companies. It's just that what it's really coming down to is, you know, it's a hardened home, but it's also coming down to, okay, where are you located, what's the HOA required to do, what are the reserves on the HOA. I mean, you know, in other words, it's not -- they're not just sitting there going oh, any old home sitting right there they're going to cover.

LINDA MILLER: Okay.

MR. WYMORE: We're trying to get better rates.

LINDA MILLER: But you have 500 homeowners that are going to be forced to use only two insurance companies that will quote them.

MR. WYMORE: I don't think there's only going to be two from what we talked to, but I think that we have to do more than just say we want to put a home there.

LINDA MILLER: Okay.

MR. WYMORE: In other words, we're having to go the extra mile to get better rates. I haven't found that we're having trouble getting homeowners insurances. I've found that what we'll have is trouble getting homeowners insurance at competitive rates.

So that's why when we plan these things, we try to go through and say, okay, well, if the HOA does this, will you give these people better rates here? If the HOA pays this, then how about these people paying that?

So you're trying to put buying power together with fire protection that's embodied in an insurance. That's basically what it comes down to.

We started that process about three months ago. We've talked to two different insurance companies. I don't remember which ones they were and I don't know who is carrying things in Yorba Linda.

But it's just the beginning to the process, but I didn't get the impression that we're going to have trouble getting it. It's just a question what do we need to do and what do we need to spend to make it much better cost effective wise and what buying power can we do if we do things through an HOA. That's kind of how I started it. And I think that will result in better deals.

LINDA MILLER: Okay.

MR. WYMORE: And then the next question is if we can get that in there, does that affect any of you depending on what happens? You know, we don't know the answer to that question.

LINDA MILLER: I just find it interesting that four of the neighborhood insurers aren't going to take a risk on Yorba Linda, but you guys are.

MR. WYMORE: Well, we're at the beginning of the deal and we've got a lot more power to be able to do things. You're already living there with the infrastructure that's there.

And so, you know, most of the fire protection people or fire insurance companies are looking at how much money can I make insuring these particular dwellings in this particular area. So you have to go in and say well, what are your -- what are your losses, your experiences, your ratings, and how do those all go into it.

And so, you know, it just happened we talked to four or five of them and then we got down to two of them that were more serious and two of them that just said, well, we don't want to cover things and cover things in California.

There's definitely resistance in the market which is why we started the process, but I don't have an answer that helps you necessarily and I don't have an answer as to what it will cost us or what we'll have to do to get it.

But I do think if we do it on buying power using again the HOA and some of the things that we're going to do that we'll be able to supply it competitively.

LINDA MILLER: Well, it's not that I'm looking to help myself. I was thinking about the poor residents that would be buying these homes that are going to find once they buy it that they can't get insurance.

MR. WYMORE: No, they're going to be able to get insurance. If they can't get insurance, then we would have to cover that in the real estate report, and we would never be able to get a real estate report, and we would never be able to sell them.

LINDA MILLER: Okay.

MR. WYMORE: Thank you.

MS. McCARTHY-WATERS: Thank you.

And last but not least Jim, I believe it's, Wohlt, W-o-h-l-t.

JIM WOHLT: Good evening. My name is Jim Wohlt. I'm currently on the planning commission here in Yorba Linda and I'm a 30 year law enforcement veteran.

One of the things that I keep hearing about is evacuation, evacuation. It was briefly touched on by another law enforcement person here and I would ask all the veterans here, or prior fire and prior police, with all due respect to your plan when it goes down, do you think I am going to read that? No.

My last 12 years was a tactile team leader. They always put the big guy in front. I was on the line.

What I want to know -- and let's do a little role play -- I come up to you, it's going down now, I've got 12 men coming in, how am I going to get them up there?

MR. WYMORE: How am I going to get them up to --

JIM WOHLT: How am I going to get them up there?

MR. WYMORE: You're going to take them up one the roads that goes in.

JIM WOHLT: No, sir.

Where's the helipad? I've got them coming in from Santa Ana right now.

MR. WYMORE: Oh.

JIM WOHLT: I've got them coming in from L.A.

MR. WYMORE: We have all opportunities --

JIM WOHLT: I need a helipad.

Do we have that?

MR. WYMORE: We had -- we went to OCFA and asked them if they wanted a helipad. They said no, we didn't. So we set up areas in two different locations for a helicopter to be able to land.

So in the northeast area there's an area that we originally had as a soccer field. It's a QMB base and then we flattened it out. And then we have an area where they can land up there.

There's another area where they can land on the staging area. It would be along the main drag. It would be on the north side about halfway up.

And then there's another area that we're looking at that they may be able to land that will be right at the entrance, depending on how we do that part.

JIM WOHLT: Okay. What basic tactic here is I want to take the high ground and I'm going to be flying in at least a squad of 12 men -- L.A. is going to bring it 64 men. All this stuff is going on behind the scenes right now.

So when that's going down, once I get my people up there, where are my resources up there? Do we have any areas for water preps, bulldozers, any engines? Is there going to be any facility up there that perhaps the people that are down at San Antonio and Yorba Linda can go up there and access that and attack the fire or the earthquake. I mean we're right on the earthquake fault there.

MR. WYMORE: We set up two staging areas. We --

JIM WOHLT: No, not staging areas.

I mean are my assets up there where I can take men up to the top of the hill, get my assets, and start rendering aid.

Do we have any plans for that?

MR. WYMORE: Well, I don't have any plans for that, but I'm trying to understand your question. The bottom line is --

JIM WOHLT: I'd like an answer.

MR. WYMORE: -- that there is areas where you can bring --

JIM WOHLT: I want a fire station. I want a fire station with some real live assets.

MR. WYMORE: Oh, no, I don't have any -- I don't have any fire stations planned for up there. OCFA hasn't indicated that they want one.

JIM WOHLT: Okay. That's a fair answer.

MR. WYMORE: Okay.

JIM WOHLT: And that was my suggestion. Just based on my real life experience, Rodney King one and two, the soccer riots, I want to take the high ground, I want assets, and I want them within the first five minutes.

Because before I get to your plan, that's going to be an hour down the line where a white shirt is going to come down with his grease board. Okay. So just as a first responder that's what I want. My suggestion is get me a helipad, get me some assets that are up there.

MR. WYMORE: And by assets you're talking about not just water?

JIM WOHLT: Physical assets; get me two fire trucks, get me a bulldozer that sits down at Gypsum Canyon behind that fire station.

Why can't it sit up there?

MR. WYMORE: We have room for it.

JIM WOHLT: I want physical assets. That's what I would need as a first responder.

MR. WYMORE: We have room for that and we can design for that as well.

JIM WOHLT: Just a suggestion for the EIR, so it's on record, as a first responder with experience that's what I need.

MR. WYMORE: Okay. Thank you.

MS. McCARTHY-WATERS: Thank you very much.

I think that wraps it up.

FROM THE AUDIENCE: I just want a quick question.

MR. WYMORE: Sure.

FROM THE AUDIENCE: Okay.

MS. McCARTHY-WATERS: Okay. This gentleman had his hand up first.

THE REPORTER: Come and tell us your name first, please?

MS. McCARTHY-WATERS: Give us your name.

DANNY PAUL: My name is Danny Paul. I live on Stonehaven Drive and Heather Ridge.

I've got a fairly simple question. You've got an exit strategy. I think the burden -- the problem isn't so much on you guys. I think you've probably done as well as you possibly can under the circumstances.

I think the City and the County are the ones that are really culpable in helping solve the problem of traffic congestion going into Stonehaven or going into Yorba Linda Boulevard.

I haven't seen one workup that says there are 2 or 3 or 4,000 cars coming down those exit streets. And the very -- there's a very likelihood that there's 4,000 cars coming into Yorba Linda Boulevard to pick up children at the schools.

I think that the City needs to develop or the County or you or somebody has to come up with the plan that people will believe. How are you going to get people in and out of that, not in a day, not in six hours, but in 45 minutes? Because that's how fast this thing moved.

So the big unanswered question is how are you really going to cope with the real world situation of people coming in and going out simultaneously? How is that going to work? I don't think you can give me an answer and if you did, it would be too impromptu, but an answer needs to be developed.

MR. WYMORE: No, I mean what I can do is give you tell answer I've already given you. Your point that it requires more than us to do something is absolutely correct. And your point that it requires City and County coordination is absolutely correct as well.

And we've tried to at least initiate that and we've gotten some parts of that done. Obviously, you don't think it's good enough. I understand that totally. But getting somewhere is better than getting nowhere. And this is something that we're trying to do.

DANNY PAUL: But getting somewhere is not good enough if that's what the final answer is.

MR. WYMORE: No, my --

DANNY PAUL: We did the best we could, but it still wasn't good enough.

MR. WYMORE: No, I understand.

♀

What I'm -- what I'm trying to say to you is that you're right, I don't have an answer for you because I don't have the authority to do everything that needs to be done. What I can do is start talking to people which prompts those people to start looking at things.

Remember, when we came here in August, you remember if you were at that meeting and I think you were at that meeting, do you remember how many people were yelling at me from the back and saying I don't really care about this, I don't care about that, and I mean guys were talking to me in the parking lot afterwards saying, you know, if you want to do this, then you need to do this, this, this, this, this. And we listened. We started that.

Can we solve these problems? Absolutely not.

DANNY PAUL: Here's the frustration on the part of the homeowners. We've been singing the same song for 18 months and everybody keeps coming at us with these wonderful proposals, but the solution has never materialized.

The problem was the access. The roads 18 months ago. The problems is the roads right this minute. As far as you've developed it, that's still the problem. The problem is getting people in and out of this area and there is no solution available today.

MS. McCARTHY-WATERS: Thank you so much.

We've just gotten a note from the custodian and unfortunately they need to close the building up.

FROM THE AUDIENCE: I just have something real quick.

MS. McCARTHY-WATERS: There are some notepads back there if you have anything else that you want to add.

BETH STOLEN (name spelled phonetically: I just want --

THE REPORTER: I need a name.

BETH STOLEN (name spelled phonetically): My name is Beth Stolen. I'm on San Antonio. I agree with everyone here.

The only thing I'd like to say is that putting a road behind my house and having a road in front of my house is not fair. I mean that's all I can say. I strongly object to having a road going behind my house and in front of my house.

Thank you.

MS. McCARTHY-WATERS: Thank you, again.

Please if you've got any more questions, fill out one of the comment cards there and we can add it into the EIR.

Do you want to finish up?

MR. WYMORE: We're done.

(Whereupon, the proceedings concluded at 10:19 p.m.)

♀

REPORTER'S CERTIFICATE

I, Loretta Epperson, Registered Professional Reporter and Certified Shorthand Reporter No. 8161, duly licensed in the State of California, do hereby certify:

That the foregoing proceedings were taken before me at the time and place therein set forth;

That the public hearing was recorded stenographically by me and was thereafter transcribed, said transcript being a true copy of my shorthand notes thereof;

That the dismantling of the original transcript will void the reporter's certificate;

That I have no interest in the outcome of the public hearing.

In witness whereof, I have subscribed my name this 28th day of January, 2014.

Loretta Epperson, RPR, CSR 8161