PROMONTORY VILLAGE 7 DEVELOPMENT

AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

PREPARED BY

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Exhibit V

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This report documents the results of an assessment of both air quality and greenhouse gases completed for the Promontory Village 7 development, a 131-unit single-family residential development to be constructed in the Promontory Specific Plan area in El Dorado Hills, California. The Specific Plan establishes detailed land use and residential density standards, design standards for residential and commercial development, a circulation plan, and environmental protection standards.

PROMONTORY SPECIFIC PLAN EIR

The Promontory Specific Plan EIR (SCH# 94112056) was certified by the El Dorado County Board of Supervisors on November 4, 1997. The Specific Plan EIR evaluates development of 1,387 residential units at various densities on a total of 861 acres; the development of 103,670 square feet of commercial/office building space on 14.5 acres; the development of a school on 10 acres; 13.6 acres of community and neighborhood parks; and 99.8 acres of public open space areas (EDC 1997, p. 3-7). The Specific Plan EIR identifies significance thresholds for all project impacts and includes specific mitigation measures to address both site-specific and cumulative effects of development. Among other issues, the Specific Plan EIR evaluates the effects of air quality pollutants resulting from Specific Plan development. The Specific Plan EIR does not evaluate the effects of greenhouse gas emission generation.

Proposed mitigation measures were found to reduce the effects of buildout under the Specific Plan to a less than significant level for all air quality–related issues with the exception of (1) generation of construction emissions of ozone precursors (nitrogen oxide [NO_X] and reactive organic gases [ROG]), (2) generation of long-term operational air pollutant emissions, (3) exposure of sensitive receptors to carbon monoxide hot spots, and (4) cumulative impacts. These impacts were found to be significant and unavoidable. The Board of Supervisors adopted Findings of Fact and Statement of Overriding Considerations finding the Specific Plan would have economic, social, and other benefits that render acceptable the significant unavoidable environmental effects associated with the Specific Plan, including significant and unavoidable air quality impacts. The impacts to air quality were considered significant and unavoidable environmental effects according to the Statement of Overriding Considerations because the Mitigation Measures related to air quality in the Specific Plan EIR would not guarantee the full avoidance of all significant effects.

The County's actions to approve the Specific Plan and certify the Specific Plan EIR were subject to litigation and a subsequent settlement agreement. Based on the settlement agreement, the applicant reduced the residential dwelling unit densities allowed under the Specific Plan from 1,387 units to 1,100 units. Other minor changes to the Specific Plan were proposed to reduce environmental impacts. The primary effect these changes had upon the Specific Plan was the reduction of 287 allowable residential units. In response to the changes to the Specific Plan, the County prepared an addendum to the 1997 EIR.

On September 28, 1999, the Board of Supervisors adopted the findings proposed by staff and approved the Specific Plan amendments. The Notice of Determination (NOD) for the addendum was filed October 6, 1999. In conjunction with the approval of the amended Specific Plan and certification of the Specific Plan EIR Addendum, a Mitigation Monitoring and Reporting Program (MMRP) was prepared and adopted. The MMRP is a binding document and would be applicable to the Village 7 development. The specific air pollutant reduction measures contained in the Promontory Specific Plan MMRP, which the Village 7 residential development is required to implement, include measures that reduce the emissions generated during both construction and operations of the development. An outline of the mitigation measures is provided in **Appendix A**. For the entire summary of each measure, refer to the MMRP.

1.1 VILLAGE 7 DEVELOPMENT LOCATION

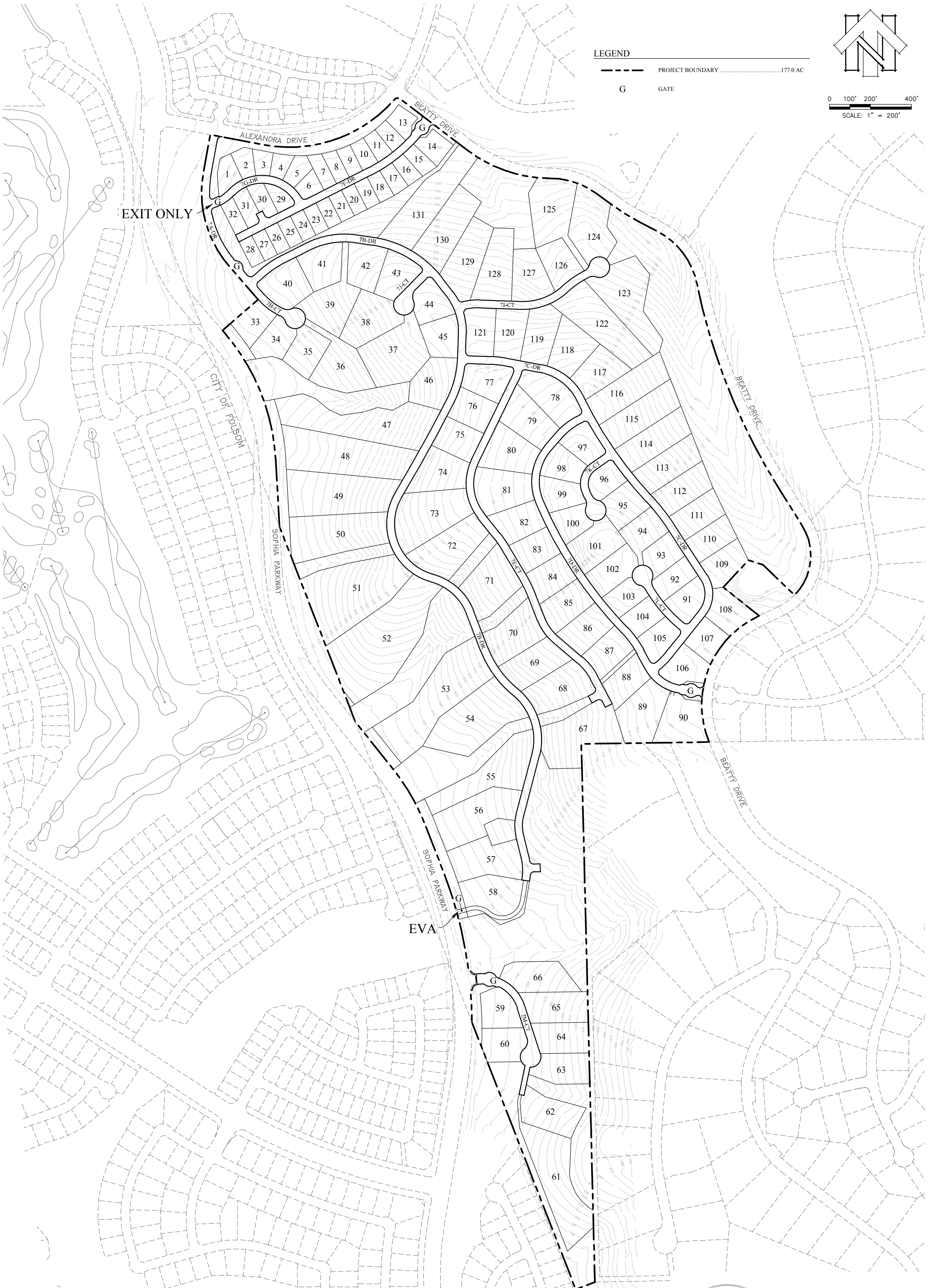
The Promontory Village 7 site is located approximately 2 miles north of US Highway 50 and 0.5 mile south of Folsom Lake. The site is bounded by Sophia Parkway at its western boundary, Alexandra Drive at its northern boundary, and Beatty Drive at its northern and eastern boundaries. The Village 7 development site is located in unincorporated El Dorado County directly adjacent to the Sacramento-El Dorado County border. A combination of residential development, a golf course, and open space surround the site. As previously described, the Promontory Village 7 site is located in the Promontory Specific Plan area.

1.2 VILLAGE DEVELOPMENT DESCRIPTION

The Village 7 development would contain 131 single-family residences, 15 acres of open space, and consist of a development footprint of ±164 acres. This land use mix is consistent with the Promontory Specific Plan and thus was evaluated for air quality impacts in the EIR. Access to the residential neighborhood will occur via Sophia Parkway.

CONCEPTUAL LAYOUT
PROMONTORY VILLAGE 7

COUNTY OF EL DORADO   NOVEMBER, 2015   STATE OF CALIFORNIA



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2.1 AIR QUALITY SETTING

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, together with the current regulatory structure that applies to the Mountain Counties Air Basin (MCAB), in which the development site is located, pursuant to the regulatory authority of the El Dorado County Air Quality Management District (EDCAQMD). The EDCAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. Currently, the portion of the MCAB in which the Village 7 development site is located (western El Dorado County) is designated as nonattainment for the state ozone (O_3) and coarse particulate matter (PM_{10}) standards as well as for the federal O_3 and fine particulate matter ($PM_{2.5}$) standards (CARB 2013). (An area designated as nonattainment for an air pollutant is an area that does not achieve national and/or state ambient air quality standards for that pollutant.)

TOPOGRAPHIC AND METEOROLOGICAL INFLUENCES ON AIR QUALITY

Ambient air quality is commonly characterized by climatological conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that influence the potential for regional and local air pollutants. The following section describes pertinent characteristics of the Mountain Counties Air Basin and provides an overview of the physical conditions affecting pollutant dispersion in the Promontory Specific Plan area.

The MCAB lies along the northern Sierra Nevada range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. The western slope of El Dorado County, from Lake Tahoe on the east to the Sacramento County boundary on the west, lies within the MCAB. Elevations range from over 10,000 feet at the Sierra crest down to several hundred feet above sea level at the Sacramento County boundary. Throughout El Dorado County, the topography is highly variable and includes rugged mountain peaks and valleys with extreme slopes and differences in altitude in the Sierras, as well as rolling foothills to the west. The general climate of the MCAB varies considerably with elevation and proximity to the Sierra ridge. In the western foothills of El Dorado County, where the Village 7 development site is located, winter temperatures usually dip below freezing only at night, and precipitation is mixed as rain or light snow. In the summer, temperatures can routinely exceed 100 degrees Fahrenheit.

From an air quality perspective, the topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface airflows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_x) that results in the formation of O_3. In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for O_3 precursors and O_3 generated in the Bay Area and the Sacramento and San Joaquin valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the state and federal ozone ambient air quality standards in the MCAB (EDCAQMD 2002, Chapter 2, p. 2).

CRITERIA AIR POLLUTANTS

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. O_3 and particulate matter (PM) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. In the region, O_3 and PM are of particular concern. Health effects commonly associated with criteria pollutants are summarized in **Table 2-1.**

TABLE 2-1
CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (NOx) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Particulate Matter (PM_{10} & $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: CAPCOA 2011

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. The health effects of TACs include cancer, birth defects, neurological damage, and death.

According to the California Air Resources Board (2009), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). Diesel PM has been identified as a human carcinogen and contains hundreds of different gaseous and particulate components, many of which are toxic. Diesel particles are so small that they penetrate deep into the lungs. Studies show that diesel PM concentrations are much higher near heavily traveled highways and intersections. Off-road construction equipment and heavy-duty trucks are considered major sources of diesel-related emissions.

WESTERN EL DORADO COUNTY AMBIENT AIR QUALITY

Ambient air quality in western El Dorado County can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. The California Air Resources Board (CARB) maintains over 60 monitoring stations throughout California. The Folsom-Natoma Street air quality monitoring station, located approximately 3.5 miles west of the Village 7 development site, is the closest station to the site. The Folsom-Natoma Street monitoring station monitors ambient concentrations of O_3. Concentrations of PM_{10} and $PM_{2.5}$ were obtained from the next closest monitoring station located in the city of Sacramento (Del Paso Manor monitoring station located approximately 15 miles from the site). Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations within the Village 7 site. **Table 2-2** summarizes the published data concerning O_3 since 2012 from the Folsom-Natoma Street monitoring station for each year that the monitoring data is provided. **Table 2-2** also shows the published data concerning PM_{10} and $PM_{2.5}$ since 2012 from the Del Paso Manor monitoring station.

TABLE 2 -2
SUMMARY OF AMBIENT AIR QUALITY DATA

Pollutant Standards	2012	2013	2014
Ozone (Folsom-Natoma Street Air Quality Monitoring Station)			
Max 1-hour concentration (ppm)	0.122	1.114	0.100
Max 8-hour concentration (ppm) (state/federal)	0.106 / 0.105	0.087 / 0.087	0.085 / 0.084
Number of days above state 1-hr standard	19	5	7
Number of days above state/federal 8-hour standard	57 / 38	17 / 6	35 / 14
Coarse Particulate Matter (PM_{10}) (Sacramento-Del Paso Manor Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m3) (state/federal)	43.0 / 41.0	63.5 / 56.0	42.8 / 40.0
Number of days above state/federal standard	0 / 0	12.3 / 0	0 / 0
Fine Particulate Matter ($PM_{2.5}$) (Sacramento-Del Paso Manor Air Quality Monitoring Station)			
Max 24-hour concentration (µg/m3) (state/federal)	45.7 / 35.3	59.5 / 53.8	39.5 / 32.0
Number of days above federal standard	0	13.0	0

Source: CARB 2015
µg/m3 = micrograms per cubic meter; ppm = parts per million

2.2 REGULATORY FRAMEWORK

The federal Clean Air Act of 1971 and Clean Air Act Amendments (1977) established the national ambient air quality standards (NAAQS), which are promulgated by the US Environmental Protection Agency (EPA). The State of California has also adopted its own California ambient air quality standards (CAAQS), which are promulgated by CARB. The Village 7 development would occur in the El Dorado County portion of the MCAB, which is under the air quality regulatory jurisdiction of the El Dorado County Air Quality Management District and is subject to the rules and regulations adopted by the air district to achieve attainment with the NAAQS and CAAQS.

As previously described, the Promontory Specific Plan EIR was certified by the El Dorado County Board of Supervisors on November 4, 1997. The Specific Plan EIR evaluates air quality impacts, including compliance with federal, state, and regional air quality standards, associated with the development of a range of different land uses at various densities on 999 acres. The Specific Plan EIR identifies significance thresholds for all project impacts and includes specific mitigation measures to address both site-specific and cumulative effects of development. The Village 7 development site is located within the Promontory Specific Plan area and is thus subject to the air pollutant–reducing mitigation measures contained in the Specific Plan EIR (see **Appendix A**).

2.3 POTENTIAL AIR QUALITY EFFECTS

The Promontory Specific Plan EIR addressed air quality issues related to the development of the entire Promontory Specific Plan, of which the Village 7 development is a part. As previously stated, the Village 7 development will be subject to the MMRP adopted for the Specific Plan, including implementation of mitigation measures required to reduce air quality impacts. The impact evaluation below utilizes the analyses completed in the EIR to determine the means of compliance with the EIR by the Village 7 development, or to ascertain whether implementation of the Village 7 development would result in a new impact on air quality not previously addressed in the EIR or increase the severity of previously identified EIR impacts.

Michael Baker International calculated the resultant air pollutant emissions of the Village 7 residential development using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, computer program (see **Appendix B**). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for the use of government agencies, land use planners, and environmental professionals. This model is the most current emissions model approved for use in California by various other air districts.

CONSTRUCTION-GENERATED EMISSIONS

Construction-generated emissions are temporary and short term but have the potential to represent a significant air quality impact. Construction activities result in the temporary generation of emissions resulting from site grading and excavation, paving, and motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne PM are largely dependent on the amount of ground disturbance associated with site preparation activities.

The previous analysis prepared in the Promontory Specific Plan EIR found that construction activities associated with the development of the Promontory Specific Plan would contribute to NO_x emissions at a level that is significant and unavoidable despite the imposition of several mitigation measures that reduce the Specific Plan's construction impact. These measures (listed in **Appendix A**) include Mitigation Measures 4.6.2a and 4.6.2b, which require that all construction contractors building in the Promontory Specific Plan consult the County and the EDCAQMD concerning feasible transportation alternatives in order to reduce construction worker vehicle trips and associated vehicle exhaust emissions, and to determine the implementation of appropriate Best Available Control Technologies (BACT) for the control of construction exhaust emissions. As previously stated, an MMRP was prepared and adopted with the Specific Plan and is a binding document applicable to the Village 7 residential development. The specific mitigation in the MMRP applicable to Village 7 construction activities includes EIR Mitigation Measures 4.6.1, 4.6.2a, 4.6.2b, 4.6.3, and 4.6.4. For instance, Mitigation Measure 4.6.1 requires that prior to approval of subsequent development, project applicants must prepare a fugitive dust prevention and control plan identifying all best management practices (BMP) to be implemented for the control of fugitive dust emissions throughout the construction phase. Mitigation Measure 4.6.3 requires adherence to ROG-reducing mechanisms associated with the application of paint and asphalt.

For the purposes of disclosure, **Table 2-3** illustrates the specific construction-related criteria and precursor emissions that would result from construction of the Village 7 residential neighborhood and compares them to the EDCAQMD's significance thresholds. As shown, construction-generated emissions would not exceed EDCAQMD thresholds.

TABLE 2-3
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS
(MAXIMUM POUNDS PER DAY)

Construction Activities	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_X)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Summer Emissions – Pounds per Day						
Year One	6.56	74.89	50.19	0.06	21.15	12.67
Year Two	6.17	69.66	47.74	0.06	12.15	6.69
Year Three	2.98	24.50	21.91	0.03	1.98	1.54
Year Four	2.63	22.12	21.23	0.03	1.77	1.35
Year Five	2.38	20.08	20.69	0.03	1.60	1.18
Year Six	2.14	18.17	20.22	0.03	1.44	1.03
Year Seven	1.93	16.29	19.81	0.03	1.29	0.89
Year Eight	1.79	15.00	19.51	0.03	1.18	0.79
Year Nine	33.73	9.37	14.74	0.02	0.58	0.45
Year Ten	33.72	1.16	2.04	0.00	0.12	0.07
Winter Emissions – Pounds per Day						
Year One	6.56	74.91	50.13	0.06	21.15	12.67
Year Two	6.17	69.68	47.67	0.06	12.15	6.69
Year Three	2.99	24.62	22.90	0.03	1.98	1.54
Year Four	2.65	22.24	22.18	0.03	1.77	1.35
Year Five	2.39	20.18	21.62	0.03	1.60	1.18
Year Six	2.16	18.26	21.12	0.03	1.44	1.03
Year Seven	1.94	16.37	20.61	0.03	1.29	0.89
Year Eight	1.80	15.08	20.23	0.03	1.18	0.79
Year Nine	33.73	9.38	14.69	0.02	0.58	0.45
Year Ten	33.72	1.16	2.02	0.00	0.12	0.07
EDCAQMD Potentially Significant Impact Threshold	82 pounds/day	82 pounds/day	—	—	—	—
Exceed EDCAQMD Threshold?	**No**	**No**	**—**	**—**	**—**	**—**

Source: CalEEMod version 2013.2.2. See ***Appendix B*** *for emission model outputs.*

The construction of the Village 7 residential development would be required to implement Promontory Specific Plan EIR Mitigation Measures 4.6.1, 4.6.2a, 4.6.2b, 4.6.3, and 4.6.4. Furthermore, the Village 7 development consists of a land use mix that is consistent with the Promontory Specific Plan; no Specific Plan amendment is required. Therefore, the Village 7 residential development would not result in an increase in the severity of construction-related air quality impacts. There is not a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

OPERATIONAL EMISSIONS

The analysis in the EIR found that the long-term increase of criteria air pollutants resulting from implementation of the Promontory Specific Plan would be a significant and unavoidable impact. This was concluded despite the imposition of EIR Mitigation Measure 4.6.5, which requires project applicants to encourage the location of neighborhood-serving shops and services in or adjacent to the Promontory Specific Plan area, expand public transit routes and schedules, implement Class II bikeways and pedestrian sidewalks, and demonstrate that only EPA-certified woodstoves and fireplace inserts are installed in homes. The Village 7 development would be subject to the MMRP adopted for the EIR, including Mitigation Measure 4.6.5.

For the purposes of disclosure, projected daily emissions from operations of the Village 7 residential development are summarized in **Table 2-4** accounting for the quantifiable component of EIR Mitigation Measure 4.6.5 (implementation of bike lanes and pedestrian sidewalks and prohibition of non-EPA-certified woodstoves and fireplaces) and compared to the EDCAQMD's significance thresholds. The remaining required air pollutant–reducing components of Mitigation Measure 4.6.5 cannot be quantified due to limitations in the modeling software; therefore, projected daily emissions would most likely be less than identified in **Table 2-4**. As shown, construction-generated emissions would not exceed EDCAQMD thresholds.

TABLE 2-4
OPERATIONS-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS
(MAXIMUM POUNDS PER DAY)

Operational Activities	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_X)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Summer Emissions – Pounds per Day (Maximum)						
Village 7	27.09	10.95	79.44	0.12	10.57	4.71
Winter Emissions – Pounds per Day (Maximum)						
Village 7	26.75	12.31	80.13	0.11	10.57	4.71
EDCAQMD Potentially Significant Impact Threshold	82 pounds/day	82 pounds/day	—	—	—	—
Exceed EDCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

*Source: CalEEMod version 2013.2.2. See **Appendix B** for emission model outputs.*

Notes: Emissions projections account for provision of an improved bicycle and pedestrian network as well as the prohibition of non-EPA-certified woodstoves and fireplaces.

The Village 7 development consists of a land use mix consistent with the Specific Plan, which was evaluated for air quality impacts in the EIR and determined to be significant and unavoidable. The development complies with the requirements of the EIR, as the project applicant is required to adhere to Mitigation Measure 4.6.5, which requires the Village 7 development to implement several air pollutant–reducing measures. The Village 7 development would not result in an increase in the severity of operational-related air quality impacts compared with the Specific

Plan EIR. There is not a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

AIR TOXICS

Sensitive land uses are generally defined as locations where people reside or where the presence of air emissions could adversely affect the use of the land. Typical sensitive receptors include residents, schoolchildren, hospital patients, and the elderly. As previously stated, the Specific Plan EIR evaluates development of residential neighborhoods, a school, parks, and public open space areas, all of which can be considered sensitive land uses.

Construction activities would involve the use of a variety of gasoline- or diesel-powered equipment that emits exhaust fumes considered toxic in substantial concentrations. Surrounding residents would potentially be exposed to nuisance dust and heavy equipment emissions (e.g., diesel exhaust) during construction. However, the duration of exposure would be temporary and episodic and would occur over several locations isolated from one another. Furthermore, exhaust from construction equipment dissipates rapidly.

In April 2005, CARB released the *Air Quality and Land Use Handbook: A Community Health Perspective*, which offers guidance on developing sensitive land uses in proximity to sources of air toxics. One particular source of air toxics treated in the guidance is freeways and major roadways. These roadways are sources of diesel particulate matter, which CARB has listed as a toxic air contaminant. The handbook recommends that sensitive land uses be sited no closer than 500 feet from a freeway or major roadway. This 500-foot buffer area was developed to protect sensitive receptors from exposure to diesel PM and was based on traffic-related studies that showed a 70 percent drop in PM concentrations at a distance of 500 feet from the roadway. Presumably, acute and chronic risks as well as lifetime cancer risk due to diesel PM exposure are lowered proportionately. The Village 7 site is not within 500 feet of any highway or interstate (US Highway 50 is located more than 10,560 feet [2 miles] south of the development site). Therefore, the site lies beyond the CARB-recommended buffer area, and future receptors would not be negatively affected by toxic air contaminants generated on a highway or interstate. Furthermore, there are no major stationary sources of toxic air contaminants identified in the vicinity of the development site that could potentially affect future on-site sensitive receptors (CHAPIS 2004; EPA 2013).

The previous analysis prepared in the Promontory Specific Plan EIR identified less than significant impacts associated with toxic air contaminants. Due to its nature as a residential neighborhood, the Village 7 development would not result in any sources of air toxics. The Village 7 development consists of a land use mix that is consistent with the Promontory Specific Plan; no Specific Plan amendment is required. Therefore, the Village 7 residential development would not result in an increase in the severity of air toxic–related impacts. There is not a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

CARBON MONOXIDE HOT SPOTS

Typically, substantial pollutant concentrations of CO are associated with mobile sources (e.g., vehicle idling time). Localized concentrations of CO are associated with congested roadways or signalized intersections operating at poor levels of service (LOS E or lower). High concentrations of CO may negatively affect local sensitive receptors (e.g., residents, schoolchildren, or hospital patients). The EIR found that the operations of the entire Specific Plan would contribute to concentrations of CO at a level that is significant and unavoidable. This was concluded despite the imposition of EIR Mitigation Measure 4.6.5, which requires project applicants to expand public transit routes and schedules and implement Class II bikeways and pedestrian sidewalks. The Village 7 development would be subject to the MMRP adopted for the EIR, including Mitigation Measure 4.6.5.

Vehicle emissions standards have become increasingly more stringent in the 18 years since the Specific Plan EIR was prepared. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined. Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. An analysis prepared for CO attainment in the South Coast Air Basin by the South Coast Air Quality Management District in 1992 and 2003 can be used to assist in evaluating the potential for CO hot spots. The Southern California air district conducted a CO hot spot analysis at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the level of service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be LOS E at peak morning traffic and LOS F at peak afternoon traffic. The analysis did not result in a violation of CO standards.

According to the traffic evaluation prepared for the Village 7 development (T. Kear Transportation 2015), the development would generate 1,346 daily trips, including 136 trips at the peak hour. According to the Promontory Specific Plan EIR (EDC 1997, p. 4.5-21), none of the local residential streets within and providing access to the Specific Plan area would experience daily traffic volumes in excess of 4,000 trips under cumulative conditions (cumulative conditions include buildout of the entire Promontory Specific Plan including Village 7). Therefore, no intersection in the vicinity of the Village 7 site would have traffic volumes exceeding 100,000 vehicles per day, nor would there be any reason unique to the area's meteorology to conclude that intersections would yield higher CO concentrations if modeled in detail.

CO hot spots are not an environmental impact of concern for the development. The Village 7 development consists of a land use mix consistent with the Promontory Specific Plan. Therefore, the Village 7 residential development would not result in an increase in the severity of CO-related impacts. There is not a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

ODORS

The previous analysis prepared in the Promontory Specific Plan EIR found that odors associated with the development of the Promontory Specific Plan would be less than significant with the imposition of mitigation. As previously stated, an MMRP was prepared and adopted with the Specific Plan and is a binding document applicable to the Village 7 residential development. The Village 7 development consists of a land use mix consistent with the Promontory Specific Plan; no Specific Plan amendment is required. Residential developments are not considered to be an emission source that would result in objectionable odors. There is not a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

CUMULATIVE AIR QUALITY AND AIR QUALITY PLAN CONCURRENCE

The analysis in the Specific Plan EIR found that the cumulative increase of criteria air pollutants resulting from implementation of the Promontory Specific Plan would be a significant and unavoidable impact. The Village 7 development consists of a land use mix that is consistent with the Promontory Specific Plan. Therefore the Village 7 residential development would not result in an increase in the severity of cumulative air quality impacts. There is not a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR. Furthermore, since the Village 7 development is consistent with the land uses analyzed under the Specific Plan EIR, it would not conflict with implementation of the applicable EDCAQMD air quality plans.

CONCLUSION

The Promontory Specific Plan EIR evaluated development on all the properties within the 999-acre Specific Plan area at the program level and included specific mitigation measures to address both site-specific and cumulative effects of development. The Specific Plan establishes detailed land use and residential density standards, design standards for residential and nonresidential development, a circulation plan, and environmental protection standards. The Specific Plan EIR identifies significance thresholds for all project impacts and includes a comprehensive set of mitigation measures to reduce the potential effects of development on air quality, among other issues. An MMRP was prepared and adopted with the Specific Plan. The MMRP is a binding document and would be applicable to the Village 7 residential development.

The Village 7 development consists of a land use mix consistent with the Promontory Specific Plan; no Specific Plan amendment is required. As demonstrated with this assessment, the development complies with the requirements of the EIR. Therefore, since the Village 7 development is consistent with the requirements of the EIR and consists of the land uses analyzed in the Specific Plan EIR, air quality pollutants associated with the Village 7 development would be the same as analyzed in the Specific Plan EIR and there would not be an increase in the severity of air quality impacts. There would not be a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

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3.1 GREENHOUSE GAS EMISSIONS SETTING

Since the early 1990s, scientific consensus holds that the world's population is releasing greenhouse gases (GHGs) faster than the earth's natural systems can absorb them. These gases are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), creates a blanket around the earth that allows light to pass through but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as "the greenhouse effect," human activities have accelerated the generation of GHGs beyond natural levels. The overabundance of GHGs in the atmosphere has led to a warming of the earth and has the potential to severely impact the earth's climate system.

While often used interchangeably, there is a difference between the terms "climate change" and "global warming." According to the National Academy of Sciences, climate change refers to any significant, measurable change of climate lasting for an extended period of time that can be caused by both natural factors and human activities. Global warming, on the other hand, is an average increase in the temperature of the atmosphere caused by increased GHG emissions. The use of the term "climate change" is becoming more prevalent because it encompasses all changes to the climate, not just temperature.

To fully understand global climate change, it is important to recognize the naturally occurring greenhouse effect and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs associated with land use development that are contributing to the greenhouse effect are CO_2, CH_4, and N_2O.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. For instance, methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weighs each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

3.2 REGULATORY FRAMEWORK

California has adopted various administrative initiatives and also enacted a variety of legislation relating to climate change, much of which sets aggressive goals for GHG emissions reductions in the state. The most important initiative is the California Global Warming Solutions Act of 2006 (AB 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), which was signed into law in September 2006 after considerable study and expert testimony before the legislature. The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The act directed CARB to set a GHG emission limit based on 1990 levels, to be achieved by 2020. The adoption of AB 32 provided a clear mandate that climate change should be included in the environmental review process for development proposals.

3.3 POTENTIAL GREENHOUSE GAS EMISSIONS EFFECTS

GHG emissions associated with the Village 7 development would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term regional emissions associated with new vehicular trips, stationary source emissions such as natural gas used for heating, and indirect source emissions such as electricity usage for lighting.

As previously described, the Promontory Specific Plan EIR was certified in 1997 and does not evaluate the effects of GHG emission generation. At the time of approval of the EIR, the issue of contribution of GHG emissions to climate change was a prominent issue of concern. On March 18, 2010, amendments to the State CEQA Guidelines took effect which set forth requirements for the analysis of GHG emissions under CEQA. Since the Promontory Specific Plan EIR has already been approved, the determination of whether GHG emissions and climate change needs to be analyzed for this specific development is governed by the law on supplemental or subsequent EIRs (Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163). GHG emissions and climate change are not required to be analyzed under those standards unless it constitutes "new information of substantial importance, which was not known and could not have been known at the time" the Promontory Specific Plan EIR was approved (CEQA Guidelines Section 15162(a)(3)).

The issue of GHG emissions and climate change impacts is not new information that was not known or could not have been known at the time of the approval of the Promontory Specific Plan EIR. The issue of climate change and GHG emissions was widely known prior to the EIR approval. The United Nations Framework Convention on Climate Change was established in 1992. The regulation of GHG emissions to reduce climate change impacts was extensively debated and analyzed throughout the early 1990s. The studies and analyses of this issue resulted in the adoption of the Kyoto Protocol in 1997.

As is clear from documents in the administrative record, the fact that GHG emissions could have a significant adverse environmental impact was known at the time the Specific Plan EIR was approved in 1997. Consistent with the statutory language, the courts have repeatedly held that new information that "was known" or "could have been known with the exercise of reasonable diligence" at the time of the EIR certification does not trigger the supplemental EIR standard. (*Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2011) 196 Cal.App.4th 515, 532 ("CREED II"); ALARM, supra, 12 Cal.App.4th at 1800–1803.) In particular, the courts have held that information on GHG emissions could have been known as early as 1994 and therefore do not trigger the new information standard under Section 21166 for EIRs certified after that date (CREED II, supra, 196 Cal.App.4th at 530–532 [Impact from GHGs not new information for EIR certified in 1994.]). Since the Promontory Specific Plan EIR was approved in 1997, CREED II is dispositive and establishes that no review of this environmental issue is required for this project. (See also *Concerned Dublin Citizens v. City of Dublin* (2013) 214 Cal. App. 4th 1301—the potential effects of GHG emissions were known and could have been addressed in conjunction with the approval of the Specific Plan EIR in 1997.)

Therefore, the impact of GHG emissions on climate change was known at the time of adoption of the Promontory Specific Plan EIR in 1997 and therefore; under CEQA standards, it is not new information that requires analysis in a supplemental EIR or negative declaration. No supplemental environmental analysis of the project's impacts on this issue is required under CEQA.

Nonetheless, for purposes of full disclosure, a GHG analysis of the Promontory Village 7 development has been provided. Similar to the air quality impact analysis, the assessment of GHG emissions provided below is based on guidance from the EDCAQMD. The EDCAQMD, in association with a committee of air districts in the Sacramento region, has developed GHG thresholds in order to provide a uniform scale to measure the significance of land use development projects. The EDCAQMD screening threshold of significance for GHG emissions is the generation of 1,100 metric tons of CO_2e per year during construction activities and 1,100 metric tons of CO_2e per year during operations. In the case that the residential development is projected to exceed these screening thresholds, it must then be compared to the emissions reductions goals of AB 32, which is the achievement of at least a 21.7 percent reduction in GHG emissions as compared to a No Action Taken (NAT) scenario.[1] A development demonstrated to have reduced or mitigated its GHG emissions by at least 21.7 percent compared to NAT would be determined to have a less than significant individual and cumulative effect on global climate change.

The resultant GHG emissions of the Village 7 residential development were calculated by Michael Baker International using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, computer program (see **Appendix C**). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for the use of government agencies, land use planners, and environmental professionals. The residential development is projected to exceed the EDCAQMD operational screening threshold and therefore, operational emissions are compared to the achievement of at least a 21.7 percent reduction in GHG emissions as compared to the NAT scenario, consistent with EXCAQMD guidance.

CONSTRUCTION EMISSIONS

Table 3-1 illustrates the specific construction-related CO_2e emissions that would result from construction of the Village 7 residential neighborhood and compares them to the EDCAQMD's significance thresholds. As shown, construction-generated emissions would not exceed the EDCAQMD screening threshold for construction.

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[1] A No Action Taken (NAT) scenario does not take into account any reductions from GHG reduction measures included in the AB 32 Scoping Plan. It, in effect, is a projection of GHG emissions in the future if we assume that California proceeds with business as usual without taking any measures to reduce GHG emissions pursuant to AB 32 mandates.

TABLE 3-1
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS
(METRIC TONS PER YEAR)

Construction Activities	CO_2e
Metric Tons per Year	
Year One	653
Year Two	634
Year Three	384
Year Four	378
Year Five	373
Year Six	372
Year Seven	370
Year Eight	328
Year Nine	140
Year Ten	11
EDCAQMD Potentially Significant Impact Threshold	1,100
Exceed EDCAQMD Threshold?	**No**

Source: CalEEMod version 2013.2.2. See ***Appendix C*** *for emission model outputs.*

OPERATIONAL EMISSIONS

As shown in **Table 3-2**, the development site could produce 2,443 metric tons of CO_2e annually under NAT conditions, primarily from motor vehicles that travel to and from the site. For purposes of this assessment, the total emissions of 2,443 metric tons of CO_2e per year are considered the NAT figure.

TABLE 3-2
ESTIMATED GREENHOUSE GAS EMISSIONS UNDER NAT OPERATIONS (METRIC TONS PER YEAR)

Emissions Source	CO_2e
Area Source (landscaping, hearth)	200
Energy	418
Mobile	1,752
Waste	43
Water	30
Total	**2,443**

Source: CalEEMod version 2013.2.2. See ***Appendix C*** *for emission model outputs.*

Notes: NAT emissions projections account for development-generated emissions without any greenhouse gas reduction measures; i.e., emissions presented are not adjusted for future improved CAFÉ standards (Pavley I) and Low Carbon Fuel Standards, or the 2011 Renewables Portfolio Standard or 2013 Building Energy Efficiency Standards.

Several State-led GHG emissions–reducing regulations have recently taken effect, and changes to regulations will continue to take effect in the near future that will substantially reduce GHG emissions. For instance, implementation of Assembly Bill 1493 (the Pavley Standard) (Health and Safety Code Sections 42823 and 43018.5) and the Low Carbon Fuel Standard (LCFS) will significantly reduce the amount of GHGs emitted from passenger vehicles. The Pavley Standard is aimed to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016 by requiring increased fuel efficiency standards of automobile manufacturers, and the LCFS requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The electricity provider for El Dorado Hills, Pacific Gas and Electric Company (PG&E), is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020, which will have the effect of reducing GHG emissions generated during energy production. For example, from 2005 to 2012, PG&E increased its purchase of renewable source–generated electricity to levels that currently account for just over half of its total power mix (PG&E 2014). In addition, the California Energy Commission recently adopted changes to the 2013 Building Energy Efficiency Standards contained in the California Code of Regulations, resulting in standards that are 25 percent more efficient than previous standards for residential construction.

Additionally, local regulations reduce GHG emissions. For instance, the EDCAQMD recommends the use of "natural gas or propane only" fireplaces and thus El Dorado County prohibits the installation of wood-burning appliances in new development as a standard condition of approval for all residential developments. Furthermore, an MMRP was prepared and adopted with the Specific Plan. The MMRP is a binding document and would be applicable to the Village 7 residential development. Therefore, the Village 7 residential development would be required to implement Specific Plan EIR Mitigation Measure 4.6.5 (implementation of bike lanes).

Table 3-3 shows the GHG emission reductions associated with State and local regulations.

TABLE 3-3
SUMMARY OF GHG REDUCTIONS

Emissions Reduction Summary	CO_2 Emissions (Metric Tons/Year)
Total No Action Taken (NAT) Emissions	**2,443**
Reductions (State & local Regulations, Specific Plan Mitigation, & Decrease of Development Potential)	-632
Emissions After Reductions	**1,811**
Percentage Reduction from No Action Taken	25.8
Percentage Reduction Threshold for Less than Significant Determination	21.7

Data output is included as ***Appendix C.***

As projected, NAT emissions would be reduced by 21.7 percent compared to NAT and therefore the Village 7 development is determined to have a less than significant individual and cumulative effect on global climate change. The development is considered consistent with the State of California's ability to meet its GHG reduction goals.

GREENHOUSE GAS REDUCTION PLAN

California has adopted several policies and regulations for the purpose of reducing GHG emissions. AB 32 was enacted in 2006 to reduce statewide GHG emissions to 1990 levels by 2020. As identified above, the Village 7 development would reduce GHG emissions from the NAT scenario by more than 21.7 percent. Therefore, the development complies with the requirements of AB 32.

CONCLUSION

The impact of GHG emissions on climate change was known at the time of adoption of the Promontory Specific Plan EIR in 1997 and therefore; under CEQA standards, it is not new information that requires analysis in a supplemental EIR or negative declaration. No supplemental environmental analysis of the project's impacts on this issue is required under CEQA. Nonetheless, for purposes of full disclosure, a GHG analysis of the Promontory Village 7 development has been prepared and as analyzed, it is determined that the development would not conflict with the state goals listed in AB 32 or in any preceding state policies adopted to reduce GHG emissions.

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APPENDICES

APPENDIX A

PROMONTORY SPECIFIC PLAN AIR QUALITY - RELATED MITIGATION MEASURES

PROMONTORY SPECIFIC PLAN EIR AIR QUALITY-RELATED MITIGATION MEASURES

1. **Specific Plan EIR Mitigation Measure 4.6.1:** Prior to approval of subsequent development, project applicants shall demonstrate to the County and District their compliance with Rule 223 of the El Dorado County Air Quality Management District's (EDCAQMD) Rules and Regulations handbook in written report form. This fugitive dust prevention and control plan shall briefly list all Best management Practices (BMP) to be implemented for the control of fugitive dust emission throughout the construction phase.

2. **Specific Plan EIR Mitigation Measure 4.6.2a:** The County shall encourage subsequent site development to incorporate the use of Best Available Control Technologies (BACT) for the control of construction exhaust emissions. The EDCAQMD shall be consulted to determine the appropriate BACT measures available (regular tune-us, cleaner burning conventional fuels, alternative fueled vehicles and equipment).

3. **Specific Plan EIR Mitigation Measure 4.6.2b:** Prior to future final map approvals, the project applicant shall consult the County and the EDCAQMD concerning feasible transportation alternatives in order to reduce construction worker vehicle trips and associated vehicle exhaust emissions.

4. **Specific Plan EIR Mitigation Measure 4.6.3:** Prior to final map approvals, the project applicant shall demonstrate to the County and the EDCAPCD their compliance with Rules 215 and 224 of the EDCAQMD's Rules and Regulations handbook for the control of ROG emissions from architectural and asphalt coatings.

5. **Specific Plan EIR Mitigation Measure 4.6.4:** Prior to future final map approvals, the project applicant shall demonstrate complete compliance with the EDCAQMD's open burning rules contained in Regulation III.

6. **Specific Plan EIR Mitigation Measure 4.6.5:** Implementation of the following measures would reduce, but no eliminate, the significant air quality impacts:

    - The project applicant shall encourage the location of neighborhood-service shops and services in or adjacent to the Promontory Specific Plan area. By providing these shops and services within the planned commercial center, residential shopping travel distances will be reduced, subsequently reducing mobile source criteria air pollutant emissions.
    - Public transit system improvements within the project in include: expansion of routes and schedules servicing the project, convenient access to existing or future public transportation system (i.e., possible Regional Transit light rail system extension servicing the Highway 50 corridor), and incorporation of convenient transit stops in project design (i.e., bus turnouts, benches with shelters).
    - All major surface streets are proposed to accommodate Class II bikeways and pedestrian sidewalks. These project proposed bicycle lanes in addition to the sidewalks shall be linked to the commercial center and local area network. Planned bikeways and sidewalks from the City of Folsom in the Russell Ranch Specific Plan shall be extended to connect to the proposed village center.
    - Prior to future final map approvals, the project applicant shall demonstrate that only EPA certified wood stoves and fireplaces inserts are installed in homes. Standard masonry fireplaces, uncertified by the EPA, shall not be constructed.

7. **Specific Plan EIR Mitigation Measure 4.6.6.** Implement Mitigation Measure 4.6.5.

8. **Specific Plan EIR Mitigation Measure 4.6.8.** As part of the improvement plans review and approval process, the County shall require project applicants to consult with the El Dorado County Air Pollution Control District and the El Dorado County Irrigation District (EID) regarding sewage pump/lift station odor control technologies. In the event that odor impacts occur, odor control measure shall be required by the County, District, and EID.

9. **Specific Plan EIR Mitigation Measure 4.6.9.** Implement Mitigation Measure 4.6.1, 4.6.2a, 4.6.2b, 4.6.3, 4.6.4, and 4.6.5.

APPENDIX B – CALEEMOD OUTPUT FILES – CRITERIA AIR POLLUTANT EMISSIONS

Promontory Village 7

El Dorado-Mountain County County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	164.00	235,800.00	375

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	445	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Year 2012 CO2 Intensity Factor

Land Use - Acreage = 164

Construction Phase - Building construction assumed to occur over six years

Grading -

Woodstoves - Accounts for Promontory Specific Plan mitigation measure 4.6.5 - EPA certified woodstoves and fireplaces. Accounts for wood mass burned consist with Specific Plan EIR Table 4.6-4.

Vehicle Trips - Trip generation per T. Kear Transportation Planning and Management, Inc.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	1,550.00
tblFireplaces	FireplaceWoodMass	3,078.40	215.00
tblLandUse	LotAcreage	42.53	164.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	445
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	10.08	10.28
tblVehicleTrips	SU_TR	8.77	10.28
tblVehicleTrips	WD_TR	9.57	10.28
tblWoodstoves	NumberNoncatalytic	6.55	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	211.00

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					
2016	6.5690	74.8957	50.1999	0.0638	18.2141	3.5856	21.1540	9.9699	3.2987	12.6746	0.0000	6,587.5190	6,587.5190	1.9436	0.0000	6,628.3345
2017	6.1778	69.6647	47.7445	0.0638	8.8376	3.3185	12.1561	3.6401	3.0530	6.6931	0.0000	6,479.0978	6,479.0978	1.9422	0.0000	6,519.8843
2018	2.9818	24.5022	21.9191	0.0346	0.4769	1.5115	1.9884	0.1282	1.4206	1.5488	0.0000	3,262.7805	3,262.7805	0.6575	0.0000	3,276.5874
2019	2.6395	22.1288	21.2303	0.0346	0.4771	1.3012	1.7783	0.1283	1.2232	1.3514	0.0000	3,215.1321	3,215.1321	0.6452	0.0000	3,228.6822
2020	2.3806	20.0805	20.6933	0.0346	0.4773	1.1272	1.6044	0.1283	1.0597	1.1880	0.0000	3,159.3386	3,159.3386	0.6358	0.0000	3,172.6905
2021	2.1495	18.1751	20.2227	0.0346	0.4774	0.9678	1.4452	0.1284	0.9097	1.0381	0.0000	3,155.4173	3,155.4173	0.6283	0.0000	3,168.6113
2022	1.9391	16.2921	19.8117	0.0347	0.4775	0.8185	1.2960	0.1284	0.7699	0.8983	0.0000	3,151.9709	3,151.9709	0.6237	0.0000	3,165.0683
2023	1.7930	15.0061	19.5107	0.0347	0.4776	0.7091	1.1866	0.1285	0.6671	0.7955	0.0000	3,149.0093	3,149.0093	0.7028	0.0000	3,163.7690
2024	33.7350	9.3773	14.7441	0.0239	0.1232	0.4610	0.5842	0.0327	0.4241	0.4568	0.0000	2,264.1068	2,264.1068	0.7027	0.0000	2,278.8632
2025	33.7242	1.1639	2.0497	3.9000e-003	0.0739	0.0520	0.1260	0.0196	0.0520	0.0716	0.0000	342.8875	342.8875	0.0176	0.0000	343.2577
Total	**94.0894**	**271.2864**	**238.1260**	**0.3632**	**30.1125**	**13.8522**	**43.3191**	**14.4324**	**12.8779**	**26.7162**	**0.0000**	**34,767.2597**	**34,767.2597**	**8.4995**	**0.0000**	**34,945.7482**

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					
2016	6.5690	74.8957	50.1999	0.0638	18.2141	3.5856	21.1540	9.9699	3.2987	12.6746	0.0000	6,587.5190	6,587.5190	1.9436	0.0000	6,628.3345
2017	6.1778	69.6647	47.7445	0.0638	8.8376	3.3185	12.1561	3.6401	3.0530	6.6931	0.0000	6,479.0978	6,479.0978	1.9422	0.0000	6,519.8843
2018	2.9818	24.5022	21.9191	0.0346	0.4769	1.5115	1.9884	0.1282	1.4206	1.5488	0.0000	3,262.7805	3,262.7805	0.6575	0.0000	3,276.5874
2019	2.6395	22.1288	21.2303	0.0346	0.4771	1.3012	1.7783	0.1283	1.2232	1.3514	0.0000	3,215.1321	3,215.1321	0.6452	0.0000	3,228.6822
2020	2.3806	20.0805	20.6933	0.0346	0.4773	1.1272	1.6044	0.1283	1.0597	1.1880	0.0000	3,159.3386	3,159.3386	0.6358	0.0000	3,172.6905
2021	2.1495	18.1751	20.2227	0.0346	0.4774	0.9678	1.4452	0.1284	0.9097	1.0381	0.0000	3,155.4173	3,155.4173	0.6283	0.0000	3,168.6113
2022	1.9391	16.2921	19.8117	0.0347	0.4775	0.8185	1.2960	0.1284	0.7699	0.8983	0.0000	3,151.9709	3,151.9709	0.6237	0.0000	3,165.0683
2023	1.7930	15.0061	19.5107	0.0347	0.4776	0.7091	1.1866	0.1285	0.6671	0.7955	0.0000	3,149.0093	3,149.0093	0.7028	0.0000	3,163.7690
2024	33.7350	9.3773	14.7441	0.0239	0.1232	0.4610	0.5842	0.0327	0.4241	0.4568	0.0000	2,264.1068	2,264.1068	0.7027	0.0000	2,278.8632
2025	33.7242	1.1639	2.0497	3.9000e-003	0.0739	0.0520	0.1260	0.0196	0.0520	0.0716	0.0000	342.8875	342.8875	0.0176	0.0000	343.2577
Total	**94.0894**	**271.2864**	**238.1260**	**0.3632**	**30.1125**	**13.8522**	**43.3191**	**14.4324**	**12.8779**	**26.7162**	**0.0000**	**34,767.2597**	**34,767.2597**	**8.4995**	**0.0000**	**34,945.7481**

	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	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086
Energy	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Mobile	5.6282	10.2426	53.1118	0.1178	8.1463	0.1396	8.2858	2.1739	0.1284	2.3023		9,807.1110	9,807.1110	0.4078		9,815.6755
Total	**27.1354**	**11.1328**	**80.3501**	**0.1255**	**8.1463**	**2.5948**	**10.7411**	**2.1739**	**2.5826**	**4.7565**	**229.2449**	**12,105.2451**	**12,334.4899**	**0.5688**	**0.0598**	**12,364.9752**

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	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086
Energy	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Mobile	5.5917	10.0603	52.2082	0.1155	7.9834	0.1370	8.1203	2.1304	0.1260	2.2564		9,615.6984	9,615.6984	0.4006		9,624.1108
Total	**27.0989**	**10.9505**	**79.4465**	**0.1232**	**7.9834**	**2.5922**	**10.5756**	**2.1304**	**2.5802**	**4.7106**	**229.2449**	**11,913.8325**	**12,143.0774**	**0.5616**	**0.0598**	**12,173.4105**

	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	**0.13**	**1.64**	**1.12**	**1.83**	**2.00**	**0.10**	**1.54**	**2.00**	**0.09**	**0.96**	**0.00**	**1.58**	**1.55**	**1.27**	**0.00**	**1.55**

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	1/1/2016	6/16/2016	5	120	
2	Grading	Grading	6/17/2016	8/24/2017	5	310	
3	Building Construction	Building Construction	8/25/2017	8/3/2023	5	1550	
4	Paving	Paving	8/4/2023	6/6/2024	5	220	
5	Architectural Coating	Architectural Coating	6/7/2024	4/10/2025	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 477,495; Residential Outdoor: 159,165; 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	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	47.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

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	0.0806	0.0738	0.9563	1.8900e-003	0.1479	1.1800e-003	0.1491	0.0392	1.0800e-003	0.0403		155.2844	155.2844	7.7500e-003		155.4472
Total	**0.0806**	**0.0738**	**0.9563**	**1.8900e-003**	**0.1479**	**1.1800e-003**	**0.1491**	**0.0392**	**1.0800e-003**	**0.0403**		**155.2844**	**155.2844**	**7.7500e-003**		**155.4472**

3.2 Site Preparation - 2016

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

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	0.0806	0.0738	0.9563	1.8900e-003	0.1479	1.1800e-003	0.1491	0.0392	1.0800e-003	0.0403		155.2844	155.2844	7.7500e-003		155.4472
Total	**0.0806**	**0.0738**	**0.9563**	**1.8900e-003**	**0.1479**	**1.1800e-003**	**0.1491**	**0.0392**	**1.0800e-003**	**0.0403**		**155.2844**	**155.2844**	**7.7500e-003**		**155.4472**

3.3 Grading - 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		
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.980 7	6,414.980 7	1.9350		6,455.615 4
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**		**6,414.980 7**	**6,414.980 7**	**1.9350**		**6,455.615 4**

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	0.0895	0.0820	1.0625	2.1000e-003	0.1643	1.3100e-003	0.1656	0.0436	1.2000e-003	0.0448		172.5383	172.5383	8.6100e-003		172.7191
Total	**0.0895**	**0.0820**	**1.0625**	**2.1000e-003**	**0.1643**	**1.3100e-003**	**0.1656**	**0.0436**	**1.2000e-003**	**0.0448**		**172.5383**	**172.5383**	**8.6100e-003**		**172.7191**

3.3 Grading - 2016

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

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	0.0895	0.0820	1.0625	2.1000e-003	0.1643	1.3100e-003	0.1656	0.0436	1.2000e-003	0.0448		172.5383	172.5383	8.6100e-003		172.7191
Total	**0.0895**	**0.0820**	**1.0625**	**2.1000e-003**	**0.1643**	**1.3100e-003**	**0.1656**	**0.0436**	**1.2000e-003**	**0.0448**		**172.5383**	**172.5383**	**8.6100e-003**		**172.7191**

3.3 Grading - 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		
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

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	0.0787	0.0727	0.9395	2.1000e-003	0.1643	1.2600e-003	0.1656	0.0436	1.1500e-003	0.0447		165.7288	165.7288	7.8100e-003		165.8927
Total	**0.0787**	**0.0727**	**0.9395**	**2.1000e-003**	**0.1643**	**1.2600e-003**	**0.1656**	**0.0436**	**1.1500e-003**	**0.0447**		**165.7288**	**165.7288**	**7.8100e-003**		**165.8927**

3.3 Grading - 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					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

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	0.0787	0.0727	0.9395	2.1000e-003	0.1643	1.2600e-003	0.1656	0.0436	1.1500e-003	0.0447		165.7288	165.7288	7.8100e-003		165.8927
Total	**0.0787**	**0.0727**	**0.9395**	**2.1000e-003**	**0.1643**	**1.2600e-003**	**0.1656**	**0.0436**	**1.1500e-003**	**0.0447**		**165.7288**	**165.7288**	**7.8100e-003**		**165.8927**

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**

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	0.1707	1.1682	2.6495	2.8800e-003	0.0907	0.0168	0.1075	0.0258	0.0154	0.0412		281.1214	281.1214	2.1600e-003		281.1667
Worker	0.1848	0.1709	2.2079	4.9300e-003	0.3861	2.9500e-003	0.3890	0.1024	2.7100e-003	0.1051		389.4626	389.4626	0.0184		389.8479
Total	**0.3555**	**1.3392**	**4.8573**	**7.8100e-003**	**0.4768**	**0.0197**	**0.4965**	**0.1282**	**0.0181**	**0.1463**		**670.5840**	**670.5840**	**0.0205**		**671.0147**

3.4 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	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**

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	0.1707	1.1682	2.6495	2.8800e-003	0.0907	0.0168	0.1075	0.0258	0.0154	0.0412		281.1214	281.1214	2.1600e-003		281.1667
Worker	0.1848	0.1709	2.2079	4.9300e-003	0.3861	2.9500e-003	0.3890	0.1024	2.7100e-003	0.1051		389.4626	389.4626	0.0184		389.8479
Total	**0.3555**	**1.3392**	**4.8573**	**7.8100e-003**	**0.4768**	**0.0197**	**0.4965**	**0.1282**	**0.0181**	**0.1463**		**670.5840**	**670.5840**	**0.0205**		**671.0147**

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**

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	0.1505	1.0889	2.4248	2.8900e-003	0.0908	0.0143	0.1051	0.0258	0.0132	0.0390		278.0856	278.0856	2.0200e-003		278.1279
Worker	0.1626	0.1524	1.9616	4.9200e-003	0.3861	2.8500e-003	0.3890	0.1024	2.6400e-003	0.1051		374.7560	374.7560	0.0168		375.1077
Total	**0.3131**	**1.2413**	**4.3864**	**7.8100e-003**	**0.4769**	**0.0172**	**0.4941**	**0.1282**	**0.0158**	**0.1440**		**652.8415**	**652.8415**	**0.0188**		**653.2357**

3.4 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	0.1505	1.0889	2.4248	2.8900e-003	0.0908	0.0143	0.1051	0.0258	0.0132	0.0390		278.0856	278.0856	2.0200e-003		278.1279
Worker	0.1626	0.1524	1.9616	4.9200e-003	0.3861	2.8500e-003	0.3890	0.1024	2.6400e-003	0.1051		374.7560	374.7560	0.0168		375.1077
Total	**0.3131**	**1.2413**	**4.3864**	**7.8100e-003**	**0.4769**	**0.0172**	**0.4941**	**0.1282**	**0.0158**	**0.1440**		**652.8415**	**652.8415**	**0.0188**		**653.2357**

3.4 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	0.1406	1.0254	2.3273	2.9200e-003	0.0910	0.0134	0.1044	0.0259	0.0123	0.0382		276.6399	276.6399	1.9800e-003		276.6815
Worker	0.1473	0.1384	1.7826	4.8700e-003	0.3861	2.7600e-003	0.3889	0.1024	2.5500e-003	0.1050		357.7304	357.7304	0.0154		358.0527
Total	**0.2878**	**1.1638**	**4.1099**	**7.7900e-003**	**0.4771**	**0.0162**	**0.4932**	**0.1283**	**0.0149**	**0.1432**		**634.3703**	**634.3703**	**0.0173**		**634.7343**

3.4 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	0.1406	1.0254	2.3273	2.9200e-003	0.0910	0.0134	0.1044	0.0259	0.0123	0.0382		276.6399	276.6399	1.9800e-003		276.6815
Worker	0.1473	0.1384	1.7826	4.8700e-003	0.3861	2.7600e-003	0.3889	0.1024	2.5500e-003	0.1050		357.7304	357.7304	0.0154		358.0527
Total	**0.2878**	**1.1638**	**4.1099**	**7.7900e-003**	**0.4771**	**0.0162**	**0.4932**	**0.1283**	**0.0149**	**0.1432**		**634.3703**	**634.3703**	**0.0173**		**634.7343**

3.4 Building Construction - 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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465		2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**		**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

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	0.1328	0.8689	2.2379	2.9500e-003	0.0912	0.0116	0.1028	0.0259	0.0107	0.0366		273.1781	273.1781	1.9000e-003		273.2180
Worker	0.1365	0.1277	1.6469	4.8700e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		343.6807	343.6807	0.0145		343.9844
Total	**0.2693**	**0.9966**	**3.8849**	**7.8200e-003**	**0.4773**	**0.0143**	**0.4916**	**0.1283**	**0.0132**	**0.1416**		**616.8587**	**616.8587**	**0.0164**		**617.2024**

3.4 Building Construction - 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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465	0.0000	2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**	**0.0000**	**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

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	0.1328	0.8689	2.2379	2.9500e-003	0.0912	0.0116	0.1028	0.0259	0.0107	0.0366		273.1781	273.1781	1.9000e-003		273.2180
Worker	0.1365	0.1277	1.6469	4.8700e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		343.6807	343.6807	0.0145		343.9844
Total	**0.2693**	**0.9966**	**3.8849**	**7.8200e-003**	**0.4773**	**0.0143**	**0.4916**	**0.1283**	**0.0132**	**0.1416**		**616.8587**	**616.8587**	**0.0164**		**617.2024**

3.4 Building Construction - 2021

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	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979		2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**		**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

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	0.1274	0.7154	2.1381	2.9600e-003	0.0913	0.0102	0.1015	0.0260	9.3600e-003	0.0353		274.5891	274.5891	1.9000e-003		274.6290
Worker	0.1290	0.1195	1.5469	4.8700e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		338.0464	338.0464	0.0138		338.3361
Total	**0.2564**	**0.8349**	**3.6850**	**7.8300e-003**	**0.4774**	**0.0129**	**0.4903**	**0.1284**	**0.0119**	**0.1403**		**612.6355**	**612.6355**	**0.0157**		**612.9652**

3.4 Building Construction - 2021

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	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979	0.0000	2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**	**0.0000**	**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

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	0.1274	0.7154	2.1381	2.9600e-003	0.0913	0.0102	0.1015	0.0260	9.3600e-003	0.0353		274.5891	274.5891	1.9000e-003		274.6290
Worker	0.1290	0.1195	1.5469	4.8700e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		338.0464	338.0464	0.0138		338.3361
Total	**0.2564**	**0.8349**	**3.6850**	**7.8300e-003**	**0.4774**	**0.0129**	**0.4903**	**0.1284**	**0.0119**	**0.1403**		**612.6355**	**612.6355**	**0.0157**		**612.9652**

3.4 Building Construction - 2022

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	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581		2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**		**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

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	0.1177	0.6434	2.0253	2.9600e-003	0.0914	0.0100	0.1014	0.0260	9.2400e-003	0.0352		275.2486	275.2486	1.9500e-003		275.2895
Worker	0.1222	0.1124	1.4588	4.8700e-003	0.3861	2.7500e-003	0.3888	0.1024	2.5500e-003	0.1050		332.9726	332.9726	0.0132		333.2501
Total	**0.2400**	**0.7557**	**3.4842**	**7.8300e-003**	**0.4775**	**0.0128**	**0.4903**	**0.1284**	**0.0118**	**0.1402**		**608.2212**	**608.2212**	**0.0152**		**608.5396**

3.4 Building Construction - 2022

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	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581	0.0000	2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**	**0.0000**	**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

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	0.1177	0.6434	2.0253	2.9600e-003	0.0914	0.0100	0.1014	0.0260	9.2400e-003	0.0352		275.2486	275.2486	1.9500e-003		275.2895
Worker	0.1222	0.1124	1.4588	4.8700e-003	0.3861	2.7500e-003	0.3888	0.1024	2.5500e-003	0.1050		332.9726	332.9726	0.0132		333.2501
Total	**0.2400**	**0.7557**	**3.4842**	**7.8300e-003**	**0.4775**	**0.0128**	**0.4903**	**0.1284**	**0.0118**	**0.1402**		**608.2212**	**608.2212**	**0.0152**		**608.5396**

3.4 Building Construction - 2023

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	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557		2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**		**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

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	0.1109	0.5874	1.9229	2.9700e-003	0.0915	9.6200e-003	0.1011	0.0260	8.8500e-003	0.0349		275.9650	275.9650	1.8500e-003		276.0038
Worker	0.1159	0.1060	1.3786	4.8700e-003	0.3861	2.7500e-003	0.3889	0.1024	2.5500e-003	0.1050		328.4181	328.4181	0.0127		328.6849
Total	**0.2269**	**0.6935**	**3.3015**	**7.8400e-003**	**0.4776**	**0.0124**	**0.4899**	**0.1285**	**0.0114**	**0.1399**		**604.3831**	**604.3831**	**0.0146**		**604.6887**

3.4 Building Construction - 2023

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	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557	0.0000	2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**	**0.0000**	**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

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	0.1109	0.5874	1.9229	2.9700e-003	0.0915	9.6200e-003	0.1011	0.0260	8.8500e-003	0.0349		275.9650	275.9650	1.8500e-003		276.0038
Worker	0.1159	0.1060	1.3786	4.8700e-003	0.3861	2.7500e-003	0.3889	0.1024	2.5500e-003	0.1050		328.4181	328.4181	0.0127		328.6849
Total	**0.2269**	**0.6935**	**3.3015**	**7.8400e-003**	**0.4776**	**0.0124**	**0.4899**	**0.1285**	**0.0114**	**0.1399**		**604.3831**	**604.3831**	**0.0146**		**604.6887**

3.5 Paving - 2023

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	1.0128	9.9983	14.2850	0.0223		0.5010	0.5010		0.4609	0.4609		2,160.6139	2,160.6139	0.6988		2,175.2884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0128**	**9.9983**	**14.2850**	**0.0223**		**0.5010**	**0.5010**		**0.4609**	**0.4609**		**2,160.6139**	**2,160.6139**	**0.6988**		**2,175.2884**

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	0.0370	0.0338	0.4400	1.5500e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		104.8143	104.8143	4.0500e-003		104.8994
Total	**0.0370**	**0.0338**	**0.4400**	**1.5500e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**104.8143**	**104.8143**	**4.0500e-003**		**104.8994**

3.5 Paving - 2023

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	1.0128	9.9983	14.2850	0.0223		0.5010	0.5010		0.4609	0.4609	0.0000	2,160.6139	2,160.6139	0.6988		2,175.2884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0128**	**9.9983**	**14.2850**	**0.0223**		**0.5010**	**0.5010**		**0.4609**	**0.4609**	**0.0000**	**2,160.6139**	**2,160.6139**	**0.6988**		**2,175.2884**

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	0.0370	0.0338	0.4400	1.5500e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		104.8143	104.8143	4.0500e-003		104.8994
Total	**0.0370**	**0.0338**	**0.4400**	**1.5500e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**104.8143**	**104.8143**	**4.0500e-003**		**104.8994**

3.5 Paving - 2024

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	0.9690	9.3453	14.3254	0.0223		0.4601	0.4601		0.4233	0.4233		2,160.5812	2,160.5812	0.6988		2,175.2555
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9690**	**9.3453**	**14.3254**	**0.0223**		**0.4601**	**0.4601**		**0.4233**	**0.4233**		**2,160.5812**	**2,160.5812**	**0.6988**		**2,175.2555**

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	0.0352	0.0321	0.4188	1.5500e-003	0.1232	8.8000e-004	0.1241	0.0327	8.2000e-004	0.0335		103.5255	103.5255	3.9100e-003		103.6077
Total	**0.0352**	**0.0321**	**0.4188**	**1.5500e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**103.5255**	**103.5255**	**3.9100e-003**		**103.6077**

3.5 Paving - 2024

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	0.9690	9.3453	14.3254	0.0223		0.4601	0.4601		0.4233	0.4233	0.0000	2,160.5812	2,160.5812	0.6988		2,175.2555
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9690**	**9.3453**	**14.3254**	**0.0223**		**0.4601**	**0.4601**		**0.4233**	**0.4233**	**0.0000**	**2,160.5812**	**2,160.5812**	**0.6988**		**2,175.2555**

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	0.0352	0.0321	0.4188	1.5500e-003	0.1232	8.8000e-004	0.1241	0.0327	8.2000e-004	0.0335		103.5255	103.5255	3.9100e-003		103.6077
Total	**0.0352**	**0.0321**	**0.4188**	**1.5500e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**103.5255**	**103.5255**	**3.9100e-003**		**103.6077**

3.6 Architectural Coating - 2024

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.7809
Total	**33.7139**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.7809**

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	0.0211	0.0193	0.2513	9.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		62.1153	62.1153	2.3500e-003		62.1646
Total	**0.0211**	**0.0193**	**0.2513**	**9.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**62.1153**	**62.1153**	**2.3500e-003**		**62.1646**

3.6 Architectural Coating - 2024

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.7809
Total	**33.7139**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.7809**

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	0.0211	0.0193	0.2513	9.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		62.1153	62.1153	2.3500e-003		62.1646
Total	**0.0211**	**0.0193**	**0.2513**	**9.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**62.1153**	**62.1153**	**2.3500e-003**		**62.1646**

3.6 Architectural Coating - 2025

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**33.7040**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

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	0.0202	0.0184	0.2406	9.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		61.4395	61.4395	2.2700e-003		61.4872
Total	**0.0202**	**0.0184**	**0.2406**	**9.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**61.4395**	**61.4395**	**2.2700e-003**		**61.4872**

3.6 Architectural Coating - 2025

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.7705
Total	**33.7040**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.7705**

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	0.0202	0.0184	0.2406	9.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		61.4395	61.4395	2.2700e-003		61.4872
Total	**0.0202**	**0.0184**	**0.2406**	**9.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**61.4395**	**61.4395**	**2.2700e-003**		**61.4872**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	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	5.5917	10.0603	52.2082	0.1155	7.9834	0.1370	8.1203	2.1304	0.1260	2.2564		9,615.6984	9,615.6984	0.4006		9,624.1108
Unmitigated	5.6282	10.2426	53.1118	0.1178	8.1463	0.1396	8.2858	2.1739	0.1284	2.3023		9,807.1110	9,807.1110	0.4078		9,815.6755

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,346.68	1,346.68	1346.68	3,857,622	3,780,470
Total	1,346.68	1,346.68	1,346.68	3,857,622	3,780,470

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	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456704	0.078514	0.189610	0.161545	0.075051	0.010626	0.010499	0.000987	0.001369	0.000777	0.008668	0.000749	0.004900

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	lb/day										lb/day					
NaturalGas Mitigated	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
NaturalGas Unmitigated	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911

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	6399.73	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Total		**0.0690**	**0.5898**	**0.2510**	**3.7600e-003**		**0.0477**	**0.0477**		**0.0477**	**0.0477**		**752.9090**	**752.9090**	**0.0144**	**0.0138**	**757.4911**

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	6.39973	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Total		**0.0690**	**0.5898**	**0.2510**	**3.7600e-003**		**0.0477**	**0.0477**		**0.0477**	**0.0477**		**752.9090**	**752.9090**	**0.0144**	**0.0138**	**757.4911**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086
Unmitigated	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086

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	2.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0461					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	14.0311	0.1731	16.0708	3.3700e-003		2.3483	2.3483		2.3473	2.3473	229.2449	1,525.7647	1,755.0096	0.1270	0.0460	1,771.9381
Landscaping	0.3399	0.1273	10.9165	5.7000e-004		0.0593	0.0593		0.0593	0.0593		19.4604	19.4604	0.0195		19.8705
Total	**21.4382**	**0.3004**	**26.9873**	**3.9400e-003**		**2.4076**	**2.4076**		**2.4066**	**2.4066**	**229.2449**	**1,545.2251**	**1,774.4699**	**0.1465**	**0.0460**	**1,791.8086**

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	2.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0461					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	14.0311	0.1731	16.0708	3.3700e-003		2.3483	2.3483		2.3473	2.3473	229.2449	1,525.7647	1,755.0096	0.1270	0.0460	1,771.9381
Landscaping	0.3399	0.1273	10.9165	5.7000e-004		0.0593	0.0593		0.0593	0.0593		19.4604	19.4604	0.0195		19.8705
Total	**21.4382**	**0.3004**	**26.9873**	**3.9400e-003**		**2.4076**	**2.4076**		**2.4066**	**2.4066**	**229.2449**	**1,545.2251**	**1,774.4699**	**0.1465**	**0.0460**	**1,791.8086**

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

Promontory Village 7

El Dorado-Mountain County County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	164.00	235,800.00	375

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	445	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Year 2012 CO2 Intensity Factor

Land Use - Acreage = 164

Construction Phase - Building construction assumed to occur over six years

Grading -

Woodstoves - Accounts for Promontory Specific Plan mitigation measure 4.6.5 - EPA certified woodstoves and fireplaces. Accounts for wood mass burned consist with Specific Plan EIR Table 4.6-4.

Vehicle Trips - Trip generation per T. Kear Transportation Planning and Management, Inc.

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	1,550.00
tblFireplaces	FireplaceWoodMass	3,078.40	215.00
tblLandUse	LotAcreage	42.53	164.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	445
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	ST_TR	10.08	10.28
tblVehicleTrips	SU_TR	8.77	10.28
tblVehicleTrips	WD_TR	9.57	10.28
tblWoodstoves	NumberNoncatalytic	6.55	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	211.00

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					
2016	6.5614	74.9155	50.1371	0.0636	18.2141	3.5856	21.1540	9.9699	3.2987	12.6746	0.0000	6,568.8184	6,568.8184	1.9436	0.0000	6,609.6340
2017	6.1702	69.6822	47.6798	0.0636	8.8376	3.3185	12.1561	3.6401	3.0530	6.6931	0.0000	6,461.1005	6,461.1005	1.9422	0.0000	6,501.8870
2018	2.9999	24.6277	22.9004	0.0341	0.4769	1.5117	1.9886	0.1282	1.4208	1.5490	0.0000	3,219.5498	3,219.5498	0.6575	0.0000	3,233.3581
2019	2.6558	22.2449	22.1860	0.0341	0.4771	1.3014	1.7785	0.1283	1.2233	1.3516	0.0000	3,173.7334	3,173.7334	0.6453	0.0000	3,187.2850
2020	2.3957	20.1833	21.6267	0.0341	0.4773	1.1273	1.6046	0.1283	1.0598	1.1882	0.0000	3,119.4884	3,119.4884	0.6359	0.0000	3,132.8418
2021	2.1632	18.2661	21.1201	0.0341	0.4774	0.9679	1.4453	0.1284	0.9099	1.0383	0.0000	3,116.1596	3,116.1596	0.6284	0.0000	3,129.3552
2022	1.9493	16.3763	20.6161	0.0341	0.4775	0.8186	1.2961	0.1284	0.7700	0.8984	0.0000	3,113.2422	3,113.2422	0.6238	0.0000	3,126.3412
2023	1.8006	15.0839	20.2330	0.0341	0.4776	0.7092	1.1867	0.1285	0.6672	0.7956	0.0000	3,110.7426	3,110.7426	0.7028	0.0000	3,125.5023
2024	33.7325	9.3848	14.6982	0.0237	0.1232	0.4610	0.5842	0.0327	0.4241	0.4568	0.0000	2,252.7881	2,252.7881	0.7027	0.0000	2,267.5445
2025	33.7218	1.1681	2.0226	3.8000e-003	0.0739	0.0520	0.1260	0.0196	0.0520	0.0716	0.0000	336.1638	336.1638	0.0176	0.0000	336.5340
Total	**94.1502**	**271.9327**	**243.2199**	**0.3592**	**30.1125**	**13.8531**	**43.3200**	**14.4324**	**12.8787**	**26.7171**	**0.0000**	**34,471.7869**	**34,471.7869**	**8.4998**	**0.0000**	**34,650.2830**

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					
2016	6.5614	74.9155	50.1371	0.0636	18.2141	3.5856	21.1540	9.9699	3.2987	12.6746	0.0000	6,568.8184	6,568.8184	1.9436	0.0000	6,609.6340
2017	6.1702	69.6822	47.6798	0.0636	8.8376	3.3185	12.1561	3.6401	3.0530	6.6931	0.0000	6,461.1005	6,461.1005	1.9422	0.0000	6,501.8870
2018	2.9999	24.6277	22.9004	0.0341	0.4769	1.5117	1.9886	0.1282	1.4208	1.5490	0.0000	3,219.5498	3,219.5498	0.6575	0.0000	3,233.3581
2019	2.6558	22.2449	22.1860	0.0341	0.4771	1.3014	1.7785	0.1283	1.2233	1.3516	0.0000	3,173.7334	3,173.7334	0.6453	0.0000	3,187.2850
2020	2.3957	20.1833	21.6267	0.0341	0.4773	1.1273	1.6046	0.1283	1.0598	1.1882	0.0000	3,119.4884	3,119.4884	0.6359	0.0000	3,132.8418
2021	2.1632	18.2661	21.1201	0.0341	0.4774	0.9679	1.4453	0.1284	0.9099	1.0383	0.0000	3,116.1596	3,116.1596	0.6284	0.0000	3,129.3552
2022	1.9493	16.3763	20.6161	0.0341	0.4775	0.8186	1.2961	0.1284	0.7700	0.8984	0.0000	3,113.2422	3,113.2422	0.6238	0.0000	3,126.3412
2023	1.8006	15.0839	20.2330	0.0341	0.4776	0.7092	1.1867	0.1285	0.6672	0.7956	0.0000	3,110.7426	3,110.7426	0.7028	0.0000	3,125.5023
2024	33.7325	9.3848	14.6982	0.0237	0.1232	0.4610	0.5842	0.0327	0.4241	0.4568	0.0000	2,252.7881	2,252.7881	0.7027	0.0000	2,267.5445
2025	33.7218	1.1681	2.0226	3.8000e-003	0.0739	0.0520	0.1260	0.0196	0.0520	0.0716	0.0000	336.1638	336.1638	0.0176	0.0000	336.5340
Total	**94.1502**	**271.9327**	**243.2199**	**0.3592**	**30.1125**	**13.8531**	**43.3200**	**14.4324**	**12.8787**	**26.7171**	**0.0000**	**34,471.7869**	**34,471.7869**	**8.4998**	**0.0000**	**34,650.2830**

	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	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086
Energy	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Mobile	5.2864	11.6338	53.6755	0.1071	8.1463	0.1401	8.2863	2.1739	0.1288	2.3027		8,944.5897	8,944.5897	0.4079		8,953.1556
Total	**26.7936**	**12.5239**	**80.9138**	**0.1148**	**8.1463**	**2.5953**	**10.7416**	**2.1739**	**2.5830**	**4.7570**	**229.2449**	**11,242.7238**	**11,471.9687**	**0.5689**	**0.0598**	**11,502.4553**

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	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086
Energy	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Mobile	5.2507	11.4267	52.8992	0.1051	7.9834	0.1375	8.1208	2.1304	0.1265	2.2569		8,770.3608	8,770.3608	0.4007		8,778.7745
Total	**26.7580**	**12.3169**	**80.1374**	**0.1128**	**7.9834**	**2.5927**	**10.5761**	**2.1304**	**2.5807**	**4.7111**	**229.2449**	**11,068.4949**	**11,297.7398**	**0.5616**	**0.0598**	**11,328.0742**

	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	**0.13**	**1.65**	**0.96**	**1.81**	**2.00**	**0.10**	**1.54**	**2.00**	**0.09**	**0.96**	**0.00**	**1.55**	**1.52**	**1.27**	**0.00**	**1.52**

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	1/1/2016	6/16/2016	5	120	
2	Grading	Grading	6/17/2016	8/24/2017	5	310	
3	Building Construction	Building Construction	8/25/2017	8/3/2023	5	1550	
4	Paving	Paving	8/4/2023	6/6/2024	5	220	
5	Architectural Coating	Architectural Coating	6/7/2024	4/10/2025	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

Residential Indoor: 477,495; Residential Outdoor: 159,165; 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	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	47.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

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	0.0737	0.0916	0.8997	1.6800e-003	0.1479	1.1800e-003	0.1491	0.0392	1.0800e-003	0.0403		138.4539	138.4539	7.7500e-003		138.6167
Total	**0.0737**	**0.0916**	**0.8997**	**1.6800e-003**	**0.1479**	**1.1800e-003**	**0.1491**	**0.0392**	**1.0800e-003**	**0.0403**		**138.4539**	**138.4539**	**7.7500e-003**		**138.6167**

3.2 Site Preparation - 2016

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

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	0.0737	0.0916	0.8997	1.6800e-003	0.1479	1.1800e-003	0.1491	0.0392	1.0800e-003	0.0403		138.4539	138.4539	7.7500e-003		138.6167
Total	**0.0737**	**0.0916**	**0.8997**	**1.6800e-003**	**0.1479**	**1.1800e-003**	**0.1491**	**0.0392**	**1.0800e-003**	**0.0403**		**138.4539**	**138.4539**	**7.7500e-003**		**138.6167**

3.3 Grading - 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					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.980 7	6,414.980 7	1.9350		6,455.615 4
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**		**6,414.980 7**	**6,414.980 7**	**1.9350**		**6,455.615 4**

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	0.0819	0.1017	0.9997	1.8700e-003	0.1643	1.3100e-003	0.1656	0.0436	1.2000e-003	0.0448		153.8377	153.8377	8.6100e-003		154.0186
Total	**0.0819**	**0.1017**	**0.9997**	**1.8700e-003**	**0.1643**	**1.3100e-003**	**0.1656**	**0.0436**	**1.2000e-003**	**0.0448**		**153.8377**	**153.8377**	**8.6100e-003**		**154.0186**

3.3 Grading - 2016

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.980 7	6,414.980 7	1.9350		6,455.615 4
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**8.6733**	**3.5842**	**12.2576**	**3.5965**	**3.2975**	**6.8940**	**0.0000**	**6,414.980 7**	**6,414.980 7**	**1.9350**		**6,455.615 4**

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	0.0819	0.1017	0.9997	1.8700e-003	0.1643	1.3100e-003	0.1656	0.0436	1.2000e-003	0.0448		153.8377	153.8377	8.6100e-003		154.0186
Total	**0.0819**	**0.1017**	**0.9997**	**1.8700e-003**	**0.1643**	**1.3100e-003**	**0.1656**	**0.0436**	**1.2000e-003**	**0.0448**		**153.8377**	**153.8377**	**8.6100e-003**		**154.0186**

3.3 Grading - 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					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518		6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**		**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

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	0.0710	0.0902	0.8748	1.8700e-003	0.1643	1.2600e-003	0.1656	0.0436	1.1500e-003	0.0447		147.7315	147.7315	7.8100e-003		147.8955
Total	**0.0710**	**0.0902**	**0.8748**	**1.8700e-003**	**0.1643**	**1.2600e-003**	**0.1656**	**0.0436**	**1.1500e-003**	**0.0447**		**147.7315**	**147.7315**	**7.8100e-003**		**147.8955**

3.3 Grading - 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					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.0991	69.5920	46.8050	0.0617		3.3172	3.3172		3.0518	3.0518	0.0000	6,313.3690	6,313.3690	1.9344		6,353.9915
Total	**6.0991**	**69.5920**	**46.8050**	**0.0617**	**8.6733**	**3.3172**	**11.9905**	**3.5965**	**3.0518**	**6.6483**	**0.0000**	**6,313.3690**	**6,313.3690**	**1.9344**		**6,353.9915**

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	0.0710	0.0902	0.8748	1.8700e-003	0.1643	1.2600e-003	0.1656	0.0436	1.1500e-003	0.0447		147.7315	147.7315	7.8100e-003		147.8955
Total	**0.0710**	**0.0902**	**0.8748**	**1.8700e-003**	**0.1643**	**1.2600e-003**	**0.1656**	**0.0436**	**1.1500e-003**	**0.0447**		**147.7315**	**147.7315**	**7.8100e-003**		**147.8955**

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**

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	0.2135	1.2647	3.8169	2.8800e-003	0.0907	0.0171	0.1078	0.0258	0.0157	0.0415		278.6145	278.6145	2.2300e-003		278.6614
Worker	0.1669	0.2119	2.0558	4.3900e-003	0.3861	2.9500e-003	0.3890	0.1024	2.7100e-003	0.1051		347.1691	347.1691	0.0184		347.5544
Total	**0.3804**	**1.4766**	**5.8727**	**7.2700e-003**	**0.4768**	**0.0200**	**0.4968**	**0.1282**	**0.0184**	**0.1466**		**625.7836**	**625.7836**	**0.0206**		**626.2158**

3.4 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	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**

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	0.2135	1.2647	3.8169	2.8800e-003	0.0907	0.0171	0.1078	0.0258	0.0157	0.0415		278.6145	278.6145	2.2300e-003		278.6614
Worker	0.1669	0.2119	2.0558	4.3900e-003	0.3861	2.9500e-003	0.3890	0.1024	2.7100e-003	0.1051		347.1691	347.1691	0.0184		347.5544
Total	**0.3804**	**1.4766**	**5.8727**	**7.2700e-003**	**0.4768**	**0.0200**	**0.4968**	**0.1282**	**0.0184**	**0.1466**		**625.7836**	**625.7836**	**0.0206**		**626.2158**

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**

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	0.1865	1.1781	3.5620	2.8900e-003	0.0908	0.0145	0.1053	0.0258	0.0134	0.0392		275.6132	275.6132	2.0900e-003		275.6570
Worker	0.1447	0.1888	1.8058	4.3900e-003	0.3861	2.8500e-003	0.3890	0.1024	2.6400e-003	0.1051		333.9977	333.9977	0.0168		334.3494
Total	**0.3312**	**1.3669**	**5.3677**	**7.2800e-003**	**0.4769**	**0.0174**	**0.4943**	**0.1282**	**0.0160**	**0.1442**		**609.6109**	**609.6109**	**0.0188**		**610.0064**

3.4 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	2,609.938 9	2,609.938 9	0.6387		2,623.351 7
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.938 9**	**2,609.938 9**	**0.6387**		**2,623.351 7**

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	0.1865	1.1781	3.5620	2.8900e-003	0.0908	0.0145	0.1053	0.0258	0.0134	0.0392		275.6132	275.6132	2.0900e-003		275.6570
Worker	0.1447	0.1888	1.8058	4.3900e-003	0.3861	2.8500e-003	0.3890	0.1024	2.6400e-003	0.1051		333.9977	333.9977	0.0168		334.3494
Total	**0.3312**	**1.3669**	**5.3677**	**7.2800e-003**	**0.4769**	**0.0174**	**0.4943**	**0.1282**	**0.0160**	**0.1442**		**609.6109**	**609.6109**	**0.0188**		**610.0064**

3.4 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	0.1740	1.1086	3.4382	2.9100e-003	0.0910	0.0136	0.1046	0.0259	0.0125	0.0384		274.2039	274.2039	2.0500e-003		274.2471
Worker	0.1302	0.1713	1.6274	4.3400e-003	0.3861	2.7600e-003	0.3889	0.1024	2.5500e-003	0.1050		318.7677	318.7677	0.0154		319.0900
Total	**0.3041**	**1.2799**	**5.0657**	**7.2500e-003**	**0.4771**	**0.0164**	**0.4934**	**0.1283**	**0.0151**	**0.1433**		**592.9717**	**592.9717**	**0.0174**		**593.3371**

3.4 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	0.1740	1.1086	3.4382	2.9100e-003	0.0910	0.0136	0.1046	0.0259	0.0125	0.0384		274.2039	274.2039	2.0500e-003		274.2471
Worker	0.1302	0.1713	1.6274	4.3400e-003	0.3861	2.7600e-003	0.3889	0.1024	2.5500e-003	0.1050		318.7677	318.7677	0.0154		319.0900
Total	**0.3041**	**1.2799**	**5.0657**	**7.2500e-003**	**0.4771**	**0.0164**	**0.4934**	**0.1283**	**0.0151**	**0.1433**		**592.9717**	**592.9717**	**0.0174**		**593.3371**

3.4 Building Construction - 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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465		2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**		**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

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	0.1642	0.9415	3.3246	2.9400e-003	0.0912	0.0118	0.1029	0.0259	0.0108	0.0368		270.7858	270.7858	1.9800e-003		270.8273
Worker	0.1202	0.1579	1.4937	4.3400e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		306.2227	306.2227	0.0145		306.5264
Total	**0.2844**	**1.0994**	**4.8183**	**7.2800e-003**	**0.4773**	**0.0145**	**0.4918**	**0.1283**	**0.0134**	**0.1417**		**577.0085**	**577.0085**	**0.0164**		**577.3537**

3.4 Building Construction - 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	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465	0.0000	2,542.479 9	2,542.479 9	0.6194		2,555.488 0
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**	**0.0000**	**2,542.479 9**	**2,542.479 9**	**0.6194**		**2,555.488 0**

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	0.1642	0.9415	3.3246	2.9400e-003	0.0912	0.0118	0.1029	0.0259	0.0108	0.0368		270.7858	270.7858	1.9800e-003		270.8273
Worker	0.1202	0.1579	1.4937	4.3400e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		306.2227	306.2227	0.0145		306.5264
Total	**0.2844**	**1.0994**	**4.8183**	**7.2800e-003**	**0.4773**	**0.0145**	**0.4918**	**0.1283**	**0.0134**	**0.1417**		**577.0085**	**577.0085**	**0.0164**		**577.3537**

3.4 Building Construction - 2021

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	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979		2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**		**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

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	0.1566	0.7782	3.1862	2.9500e-003	0.0913	0.0103	0.1016	0.0260	9.4800e-003	0.0355		272.1952	272.1952	1.9800e-003		272.2367
Worker	0.1135	0.1476	1.3963	4.3300e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		301.1826	301.1826	0.0138		301.4723
Total	**0.2701**	**0.9259**	**4.5825**	**7.2800e-003**	**0.4774**	**0.0130**	**0.4904**	**0.1284**	**0.0120**	**0.1404**		**573.3778**	**573.3778**	**0.0158**		**573.7090**

3.4 Building Construction - 2021

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	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979	0.0000	2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**	**0.0000**	**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

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	0.1566	0.7782	3.1862	2.9500e-003	0.0913	0.0103	0.1016	0.0260	9.4800e-003	0.0355		272.1952	272.1952	1.9800e-003		272.2367
Worker	0.1135	0.1476	1.3963	4.3300e-003	0.3861	2.7400e-003	0.3888	0.1024	2.5400e-003	0.1050		301.1826	301.1826	0.0138		301.4723
Total	**0.2701**	**0.9259**	**4.5825**	**7.2800e-003**	**0.4774**	**0.0130**	**0.4904**	**0.1284**	**0.0120**	**0.1404**		**573.3778**	**573.3778**	**0.0158**		**573.7090**

3.4 Building Construction - 2022

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	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581		2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**		**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

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	0.1426	0.7012	2.9779	2.9500e-003	0.0914	0.0102	0.1015	0.0260	9.3500e-003	0.0354		272.8556	272.8556	2.0300e-003		272.8981
Worker	0.1075	0.1387	1.3106	4.3300e-003	0.3861	2.7500e-003	0.3888	0.1024	2.5500e-003	0.1050		296.6370	296.6370	0.0132		296.9145
Total	**0.2501**	**0.8399**	**4.2886**	**7.2800e-003**	**0.4775**	**0.0129**	**0.4904**	**0.1284**	**0.0119**	**0.1403**		**569.4925**	**569.4925**	**0.0153**		**569.8126**

3.4 Building Construction - 2022

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	1.6992	15.5364	16.3276	0.0268		0.8057	0.8057		0.7581	0.7581	0.0000	2,543.7497	2,543.7497	0.6085		2,556.5286
Total	**1.6992**	**15.5364**	**16.3276**	**0.0268**		**0.8057**	**0.8057**		**0.7581**	**0.7581**	**0.0000**	**2,543.7497**	**2,543.7497**	**0.6085**		**2,556.5286**

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	0.1426	0.7012	2.9779	2.9500e-003	0.0914	0.0102	0.1015	0.0260	9.3500e-003	0.0354		272.8556	272.8556	2.0300e-003		272.8981
Worker	0.1075	0.1387	1.3106	4.3300e-003	0.3861	2.7500e-003	0.3888	0.1024	2.5500e-003	0.1050		296.6370	296.6370	0.0132		296.9145
Total	**0.2501**	**0.8399**	**4.2886**	**7.2800e-003**	**0.4775**	**0.0129**	**0.4904**	**0.1284**	**0.0119**	**0.1403**		**569.4925**	**569.4925**	**0.0153**		**569.8126**

3.4 Building Construction - 2023

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	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557		2,544.626 2	2,544.626 2	0.6044		2,557.319 1
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**		**2,544.626 2**	**2,544.626 2**	**0.6044**		**2,557.319 1**

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	0.1326	0.6405	2.7912	2.9600e-003	0.0915	9.7200e-003	0.1012	0.0260	8.9400e-003	0.0350		273.5682	273.5682	1.9300e-003		273.6087
Worker	0.1019	0.1307	1.2326	4.3300e-003	0.3861	2.7500e-003	0.3889	0.1024	2.5500e-003	0.1050		292.5482	292.5482	0.0127		292.8149
Total	**0.2345**	**0.7713**	**4.0237**	**7.2900e-003**	**0.4776**	**0.0125**	**0.4900**	**0.1285**	**0.0115**	**0.1399**		**566.1164**	**566.1164**	**0.0146**		**566.4237**

3.4 Building Construction - 2023

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	1.5661	14.3126	16.2093	0.0268		0.6967	0.6967		0.6557	0.6557	0.0000	2,544.6262	2,544.6262	0.6044		2,557.3191
Total	**1.5661**	**14.3126**	**16.2093**	**0.0268**		**0.6967**	**0.6967**		**0.6557**	**0.6557**	**0.0000**	**2,544.6262**	**2,544.6262**	**0.6044**		**2,557.3191**

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	0.1326	0.6405	2.7912	2.9600e-003	0.0915	9.7200e-003	0.1012	0.0260	8.9400e-003	0.0350		273.5682	273.5682	1.9300e-003		273.6087
Worker	0.1019	0.1307	1.2326	4.3300e-003	0.3861	2.7500e-003	0.3889	0.1024	2.5500e-003	0.1050		292.5482	292.5482	0.0127		292.8149
Total	**0.2345**	**0.7713**	**4.0237**	**7.2900e-003**	**0.4776**	**0.0125**	**0.4900**	**0.1285**	**0.0115**	**0.1399**		**566.1164**	**566.1164**	**0.0146**		**566.4237**

3.5 Paving - 2023

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	1.0128	9.9983	14.2850	0.0223		0.5010	0.5010		0.4609	0.4609		2,160.6139	2,160.6139	0.6988		2,175.2884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0128**	**9.9983**	**14.2850**	**0.0223**		**0.5010**	**0.5010**		**0.4609**	**0.4609**		**2,160.6139**	**2,160.6139**	**0.6988**		**2,175.2884**

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	0.0325	0.0417	0.3934	1.3800e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		93.3664	93.3664	4.0500e-003		93.4516
Total	**0.0325**	**0.0417**	**0.3934**	**1.3800e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**93.3664**	**93.3664**	**4.0500e-003**		**93.4516**

3.5 Paving - 2023

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	1.0128	9.9983	14.2850	0.0223		0.5010	0.5010		0.4609	0.4609	0.0000	2,160.6139	2,160.6139	0.6988		2,175.2884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0128**	**9.9983**	**14.2850**	**0.0223**		**0.5010**	**0.5010**		**0.4609**	**0.4609**	**0.0000**	**2,160.6139**	**2,160.6139**	**0.6988**		**2,175.2884**

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	0.0325	0.0417	0.3934	1.3800e-003	0.1232	8.8000e-004	0.1241	0.0327	8.1000e-004	0.0335		93.3664	93.3664	4.0500e-003		93.4516
Total	**0.0325**	**0.0417**	**0.3934**	**1.3800e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.1000e-004**	**0.0335**		**93.3664**	**93.3664**	**4.0500e-003**		**93.4516**

3.5 Paving - 2024

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	0.9690	9.3453	14.3254	0.0223		0.4601	0.4601		0.4233	0.4233		2,160.5812	2,160.5812	0.6988		2,175.2555
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9690**	**9.3453**	**14.3254**	**0.0223**		**0.4601**	**0.4601**		**0.4233**	**0.4233**		**2,160.5812**	**2,160.5812**	**0.6988**		**2,175.2555**

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	0.0309	0.0395	0.3728	1.3800e-003	0.1232	8.8000e-004	0.1241	0.0327	8.2000e-004	0.0335		92.2069	92.2069	3.9100e-003		92.2890
Total	**0.0309**	**0.0395**	**0.3728**	**1.3800e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**92.2069**	**92.2069**	**3.9100e-003**		**92.2890**

3.5 Paving - 2024

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	0.9690	9.3453	14.3254	0.0223		0.4601	0.4601		0.4233	0.4233	0.0000	2,160.5812	2,160.5812	0.6988		2,175.2555
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9690**	**9.3453**	**14.3254**	**0.0223**		**0.4601**	**0.4601**		**0.4233**	**0.4233**	**0.0000**	**2,160.5812**	**2,160.5812**	**0.6988**		**2,175.2555**

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	0.0309	0.0395	0.3728	1.3800e-003	0.1232	8.8000e-004	0.1241	0.0327	8.2000e-004	0.0335		92.2069	92.2069	3.9100e-003		92.2890
Total	**0.0309**	**0.0395**	**0.3728**	**1.3800e-003**	**0.1232**	**8.8000e-004**	**0.1241**	**0.0327**	**8.2000e-004**	**0.0335**		**92.2069**	**92.2069**	**3.9100e-003**		**92.2890**

3.6 Architectural Coating - 2024

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.7809
Total	**33.7139**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.7809**

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	0.0186	0.0237	0.2237	8.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		55.3241	55.3241	2.3500e-003		55.3734
Total	**0.0186**	**0.0237**	**0.2237**	**8.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**55.3241**	**55.3241**	**2.3500e-003**		**55.3734**

3.6 Architectural Coating - 2024

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.7809
Total	**33.7139**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.7809**

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	0.0186	0.0237	0.2237	8.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		55.3241	55.3241	2.3500e-003		55.3734
Total	**0.0186**	**0.0237**	**0.2237**	**8.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**55.3241**	**55.3241**	**2.3500e-003**		**55.3734**

3.6 Architectural Coating - 2025

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.7705
Total	**33.7040**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.7705**

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	0.0178	0.0226	0.2134	8.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		54.7158	54.7158	2.2700e-003		54.7635
Total	**0.0178**	**0.0226**	**0.2134**	**8.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**54.7158**	**54.7158**	**2.2700e-003**		**54.7635**

3.6 Architectural Coating - 2025

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	33.5332					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.7705
Total	**33.7040**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.7705**

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	0.0178	0.0226	0.2134	8.3000e-004	0.0739	5.3000e-004	0.0745	0.0196	4.9000e-004	0.0201		54.7158	54.7158	2.2700e-003		54.7635
Total	**0.0178**	**0.0226**	**0.2134**	**8.3000e-004**	**0.0739**	**5.3000e-004**	**0.0745**	**0.0196**	**4.9000e-004**	**0.0201**		**54.7158**	**54.7158**	**2.2700e-003**		**54.7635**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	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	5.2507	11.4267	52.8992	0.1051	7.9834	0.1375	8.1208	2.1304	0.1265	2.2569		8,770.3608	8,770.3608	0.4007		8,778.7745
Unmitigated	5.2864	11.6338	53.6755	0.1071	8.1463	0.1401	8.2863	2.1739	0.1288	2.3027		8,944.5897	8,944.5897	0.4079		8,953.1556

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,346.68	1,346.68	1346.68	3,857,622	3,780,470
Total	1,346.68	1,346.68	1,346.68	3,857,622	3,780,470

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	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456704	0.078514	0.189610	0.161545	0.075051	0.010626	0.010499	0.000987	0.001369	0.000777	0.008668	0.000749	0.004900

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	lb/day										lb/day					
NaturalGas Mitigated	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
NaturalGas Unmitigated	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911

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	6399.73	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Total		**0.0690**	**0.5898**	**0.2510**	**3.7600e-003**		**0.0477**	**0.0477**		**0.0477**	**0.0477**		**752.9090**	**752.9090**	**0.0144**	**0.0138**	**757.4911**

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	6.39973	0.0690	0.5898	0.2510	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.9090	752.9090	0.0144	0.0138	757.4911
Total		**0.0690**	**0.5898**	**0.2510**	**3.7600e-003**		**0.0477**	**0.0477**		**0.0477**	**0.0477**		**752.9090**	**752.9090**	**0.0144**	**0.0138**	**757.4911**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086
Unmitigated	21.4383	0.3004	26.9873	3.9400e-003		2.4076	2.4076		2.4066	2.4066	229.2449	1,545.2251	1,774.4700	0.1465	0.0460	1,791.8086

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	2.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0461					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	14.0311	0.1731	16.0708	3.3700e-003		2.3483	2.3483		2.3473	2.3473	229.2449	1,525.7647	1,755.0096	0.1270	0.0460	1,771.9381
Landscaping	0.3399	0.1273	10.9165	5.7000e-004		0.0593	0.0593		0.0593	0.0593		19.4604	19.4604	0.0195		19.8705
Total	**21.4382**	**0.3004**	**26.9873**	**3.9400e-003**		**2.4076**	**2.4076**		**2.4066**	**2.4066**	**229.2449**	**1,545.2251**	**1,774.4699**	**0.1465**	**0.0460**	**1,791.8086**

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	2.0212					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	5.0461					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	14.0311	0.1731	16.0708	3.3700e-003		2.3483	2.3483		2.3473	2.3473	229.2449	1,525.7647	1,755.0096	0.1270	0.0460	1,771.9381
Landscaping	0.3399	0.1273	10.9165	5.7000e-004		0.0593	0.0593		0.0593	0.0593		19.4604	19.4604	0.0195		19.8705
Total	**21.4382**	**0.3004**	**26.9873**	**3.9400e-003**		**2.4076**	**2.4076**		**2.4066**	**2.4066**	**229.2449**	**1,545.2251**	**1,774.4699**	**0.1465**	**0.0460**	**1,791.8086**

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

APPENDIX C – CALEEMOD OUTPUT FILES – GREENHOUSE GAS EMISSIONS

Promontory Village 7

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	164.00	235,800.00	375

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	488	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Year 2020 CO2 Intensity Factor accounting for RPS

Land Use - Acreage = 164

Construction Phase - Building construction assumed to occur over six years

Vehicle Trips - Trip generation per T. Kear Transportation Planning and Management, Inc.

Mobile Land Use Mitigation -

Energy Use - PG&E Intensity Factor

Area Mitigation -

Energy Mitigation - CalGreen

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	3,100.00	1,550.00
tblLandUse	LotAcreage	42.53	164.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	488
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	ST_TR	10.08	10.27
tblVehicleTrips	SU_TR	8.77	10.27
tblVehicleTrips	WD_TR	9.57	10.27

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					
2016	0.7711	8.5640	6.0517	6.9300e-003	2.4480	0.4292	2.8771	1.1585	0.3948	1.5534	0.0000	649.3347	649.3347	0.1915	0.0000	653.3555
2017	0.6782	7.1547	5.0933	6.9300e-003	1.3785	0.3624	1.7408	0.5666	0.3349	0.9015	0.0000	630.7599	630.7599	0.1766	0.0000	634.4674
2018	0.3883	3.2098	2.9179	4.4600e-003	0.0597	0.1973	0.2570	0.0161	0.1854	0.2015	0.0000	382.2774	382.2774	0.0778	0.0000	383.9120
2019	0.3436	2.8992	2.8274	4.4600e-003	0.0597	0.1698	0.2296	0.0161	0.1596	0.1758	0.0000	376.8092	376.8092	0.0764	0.0000	378.4135
2020	0.3111	2.6406	2.7671	4.4800e-003	0.0600	0.1477	0.2077	0.0162	0.1388	0.1550	0.0000	371.7681	371.7681	0.0756	0.0000	373.3549
2021	0.2797	2.3806	2.6931	4.4600e-003	0.0598	0.1263	0.1861	0.0161	0.1187	0.1349	0.0000	369.9412	369.9412	0.0744	0.0000	371.5033
2022	0.2512	2.1260	2.6231	4.4500e-003	0.0596	0.1064	0.1660	0.0161	0.1001	0.1162	0.0000	368.1674	368.1674	0.0736	0.0000	369.7121
2023	0.1928	1.6918	2.3051	3.8900e-003	0.0415	0.0812	0.1228	0.0112	0.0758	0.0870	0.0000	326.3694	326.3694	0.0770	0.0000	327.9871
2024	2.5531	0.6266	0.9881	1.6400e-003	0.0120	0.0308	0.0428	3.1900e-003	0.0287	0.0319	0.0000	139.3044	139.3044	0.0376	0.0000	140.0931
2025	1.2140	0.0420	0.0728	1.4000e-004	2.5500e-003	1.8700e-003	4.4200e-003	6.8000e-004	1.8700e-003	2.5500e-003	0.0000	11.0220	11.0220	5.8000e-004	0.0000	11.0341
Total	**6.9830**	**31.3351**	**28.3396**	**0.0418**	**4.1813**	**1.6529**	**5.8342**	**1.8208**	**1.5389**	**3.3597**	**0.0000**	**3,625.7537**	**3,625.7537**	**0.8609**	**0.0000**	**3,643.8330**

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	9.5393	0.1228	11.1018	4.0100e-003		1.4280	1.4280		1.4280	1.4280	135.3175	58.3390	193.6565	0.1264	0.0106	199.6110
Energy	0.0126	0.1076	0.0458	6.9000e-004		8.7000e-003	8.7000e-003		8.7000e-003	8.7000e-003	0.0000	334.7460	334.7460	0.0149	4.8700e-003	336.5676
Mobile	0.7433	1.6017	7.3107	0.0197	1.4204	0.0216	1.4420	0.3804	0.0199	0.4004	0.0000	1,351.7139	1,351.7139	0.0541	0.0000	1,352.8493
Waste						0.0000	0.0000		0.0000	0.0000	19.0304	0.0000	19.0304	1.1247	0.0000	42.6484
Water						0.0000	0.0000		0.0000	0.0000	2.7078	14.3917	17.0995	0.2790	6.7400e-003	25.0486
Total	**10.2951**	**1.8322**	**18.4583**	**0.0244**	**1.4204**	**1.4583**	**2.8787**	**0.3804**	**1.4566**	**1.8370**	**157.0557**	**1,759.1907**	**1,916.2464**	**1.5990**	**0.0223**	**1,956.7249**

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	1.3289	0.0113	0.9764	5.0000e-005		0.0119	0.0119		0.0118	0.0118	0.0000	94.4528	94.4528	3.3300e-003	1.7000e-003	95.0505
Energy	0.0114	0.0971	0.0413	6.2000e-004		7.8500e-003	7.8500e-003		7.8500e-003	7.8500e-003	0.0000	320.2080	320.2080	0.0145	4.6200e-003	321.9434
Mobile	0.7383	1.5733	7.1984	0.0193	1.3920	0.0212	1.4132	0.3728	0.0196	0.3924	0.0000	1,325.3841	1,325.3841	0.0531	0.0000	1,326.4990
Waste						0.0000	0.0000		0.0000	0.0000	19.0304	0.0000	19.0304	1.1247	0.0000	42.6484
Water						0.0000	0.0000		0.0000	0.0000	2.7078	14.3917	17.0995	0.2789	6.7300e-003	25.0443
Total	**2.0785**	**1.6817**	**8.2161**	**0.0200**	**1.3920**	**0.0409**	**1.4329**	**0.3728**	**0.0392**	**0.4120**	**21.7382**	**1,754.4365**	**1,776.1747**	**1.4745**	**0.0131**	**1,811.1856**

	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	**79.81**	**8.21**	**55.49**	**18.10**	**2.00**	**97.19**	**50.22**	**2.00**	**97.31**	**77.57**	**86.16**	**0.27**	**7.31**	**7.79**	**41.35**	**7.44**

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	1/1/2016	6/16/2016	5	120	
2	Grading	Grading	6/17/2016	8/24/2017	5	310	
3	Building Construction	Building Construction	8/25/2017	8/3/2023	5	1550	
4	Paving	Paving	8/4/2023	6/6/2024	5	220	
5	Architectural Coating	Architectural Coating	6/7/2024	4/10/2025	5	220	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Residential Indoor: 477,495; Residential Outdoor: 159,165; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

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	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	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	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	47.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					1.0840	0.0000	1.0840	0.5958	0.0000	0.5958	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3046	3.2779	2.4663	2.3400e-003		0.1763	0.1763		0.1622	0.1622	0.0000	221.2626	221.2626	0.0667	0.0000	222.6642
Total	**0.3046**	**3.2779**	**2.4663**	**2.3400e-003**	**1.0840**	**0.1763**	**1.2603**	**0.5958**	**0.1622**	**0.7581**	**0.0000**	**221.2626**	**221.2626**	**0.0667**	**0.0000**	**222.6642**

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	4.1900e-003	5.0900e-003	0.0526	1.0000e-004	8.5000e-003	7.0000e-005	8.5700e-003	2.2600e-003	6.0000e-005	2.3300e-003	0.0000	7.7171	7.7171	4.2000e-004	0.0000	7.7260
Total	**4.1900e-003**	**5.0900e-003**	**0.0526**	**1.0000e-004**	**8.5000e-003**	**7.0000e-005**	**8.5700e-003**	**2.2600e-003**	**6.0000e-005**	**2.3300e-003**	**0.0000**	**7.7171**	**7.7171**	**4.2000e-004**	**0.0000**	**7.7260**

3.3 Grading - 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					
Fugitive Dust					1.3444	0.0000	1.3444	0.5575	0.0000	0.5575	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4568	5.2744	3.4642	4.3500e-003		0.2527	0.2527		0.2325	0.2325	0.0000	410.2799	410.2799	0.1238	0.0000	412.8787
Total	**0.4568**	**5.2744**	**3.4642**	**4.3500e-003**	**1.3444**	**0.2527**	**1.5971**	**0.5575**	**0.2325**	**0.7899**	**0.0000**	**410.2799**	**410.2799**	**0.1238**	**0.0000**	**412.8787**

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	5.4800e-003	6.6400e-003	0.0686	1.3000e-004	0.0111	9.0000e-005	0.0112	2.9500e-003	8.0000e-005	3.0400e-003	0.0000	10.0751	10.0751	5.5000e-004	0.0000	10.0867
Total	**5.4800e-003**	**6.6400e-003**	**0.0686**	**1.3000e-004**	**0.0111**	**9.0000e-005**	**0.0112**	**2.9500e-003**	**8.0000e-005**	**3.0400e-003**	**0.0000**	**10.0751**	**10.0751**	**5.5000e-004**	**0.0000**	**10.0867**

3.3 Grading - 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					
Fugitive Dust					1.3444	0.0000	1.3444	0.5575	0.0000	0.5575	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5154	5.8805	3.9550	5.2100e-003		0.2803	0.2803		0.2579	0.2579	0.0000	483.9646	483.9646	0.1483	0.0000	487.0786
Total	**0.5154**	**5.8805**	**3.9550**	**5.2100e-003**	**1.3444**	**0.2803**	**1.6247**	**0.5575**	**0.2579**	**0.8153**	**0.0000**	**483.9646**	**483.9646**	**0.1483**	**0.0000**	**487.0786**

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	5.7100e-003	7.0500e-003	0.0723	1.6000e-004	0.0133	1.1000e-004	0.0134	3.5400e-003	1.0000e-004	3.6400e-003	0.0000	11.5971	11.5971	6.0000e-004	0.0000	11.6097
Total	**5.7100e-003**	**7.0500e-003**	**0.0723**	**1.6000e-004**	**0.0133**	**1.1000e-004**	**0.0134**	**3.5400e-003**	**1.0000e-004**	**3.6400e-003**	**0.0000**	**11.5971**	**11.5971**	**6.0000e-004**	**0.0000**	**11.6097**

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	0.1412	1.2015	0.8249	1.2200e-003		0.0811	0.0811		0.0761	0.0761	0.0000	108.9630	108.9630	0.0268	0.0000	109.5262
Total	**0.1412**	**1.2015**	**0.8249**	**1.2200e-003**		**0.0811**	**0.0811**		**0.0761**	**0.0761**	**0.0000**	**108.9630**	**108.9630**	**0.0268**	**0.0000**	**109.5262**

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	8.7200e-003	0.0567	0.1496	1.3000e-004	3.9800e-003	7.7000e-004	4.7500e-003	1.1400e-003	7.1000e-004	1.8400e-003	0.0000	11.5604	11.5604	9.0000e-005	0.0000	11.5623
Worker	7.2200e-003	8.9300e-003	0.0915	2.0000e-004	0.0168	1.3000e-004	0.0170	4.4800e-003	1.2000e-004	4.6000e-003	0.0000	14.6748	14.6748	7.6000e-004	0.0000	14.6907
Total	**0.0159**	**0.0656**	**0.2411**	**3.3000e-004**	**0.0208**	**9.0000e-004**	**0.0217**	**5.6200e-003**	**8.3000e-004**	**6.4400e-003**	**0.0000**	**26.2352**	**26.2352**	**8.5000e-004**	**0.0000**	**26.2530**

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	0.3483	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	0.0220	0.1515	0.3984	3.8000e-004	0.0114	1.8800e-003	0.0133	3.2600e-003	1.7300e-003	4.9900e-003	0.0000	32.7990	32.7990	2.4000e-004	0.0000	32.8040
Worker	0.0180	0.0228	0.2315	5.9000e-004	0.0483	3.7000e-004	0.0487	0.0129	3.4000e-004	0.0132	0.0000	40.4940	40.4940	1.9800e-003	0.0000	40.5356
Total	**0.0400**	**0.1743**	**0.6299**	**9.7000e-004**	**0.0597**	**2.2500e-003**	**0.0620**	**0.0161**	**2.0700e-003**	**0.0182**	**0.0000**	**73.2930**	**73.2930**	**2.2200e-003**	**0.0000**	**73.3397**

3.4 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	0.3069	2.7359	2.2342	3.5000e-003		0.1677	0.1677		0.1577	0.1577	0.0000	305.5302	305.5302	0.0743	0.0000	307.0913
Total	**0.3069**	**2.7359**	**2.2342**	**3.5000e-003**		**0.1677**	**0.1677**		**0.1577**	**0.1577**	**0.0000**	**305.5302**	**305.5302**	**0.0743**	**0.0000**	**307.0913**

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	0.0205	0.1426	0.3838	3.8000e-004	0.0115	1.7600e-003	0.0132	3.2700e-003	1.6200e-003	4.8900e-003	0.0000	32.6296	32.6296	2.4000e-004	0.0000	32.6346
Worker	0.0162	0.0207	0.2094	5.8000e-004	0.0483	3.6000e-004	0.0487	0.0129	3.3000e-004	0.0132	0.0000	38.6494	38.6494	1.8200e-003	0.0000	38.6876
Total	**0.0368**	**0.1633**	**0.5932**	**9.6000e-004**	**0.0597**	**2.1200e-003**	**0.0619**	**0.0161**	**1.9500e-003**	**0.0181**	**0.0000**	**71.2790**	**71.2790**	**2.0600e-003**	**0.0000**	**71.3222**

3.4 Building Construction - 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	0.2766	2.5000	2.2019	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.1514	302.1514	0.0736	0.0000	303.6973
Total	**0.2766**	**2.5000**	**2.2019**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.1514**	**302.1514**	**0.0736**	**0.0000**	**303.6973**

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	0.0195	0.1214	0.3719	3.9000e-004	0.0115	1.5300e-003	0.0131	3.2900e-003	1.4100e-003	4.7000e-003	0.0000	32.3454	32.3454	2.3000e-004	0.0000	32.3502
Worker	0.0151	0.0191	0.1934	5.8000e-004	0.0485	3.6000e-004	0.0488	0.0129	3.3000e-004	0.0132	0.0000	37.2713	37.2713	1.7200e-003	0.0000	37.3074
Total	**0.0345**	**0.1406**	**0.5652**	**9.7000e-004**	**0.0600**	**1.8900e-003**	**0.0619**	**0.0162**	**1.7400e-003**	**0.0179**	**0.0000**	**69.6167**	**69.6167**	**1.9500e-003**	**0.0000**	**69.6576**

3.4 Building Construction - 2021

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	0.2471	2.2629	2.1582	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.0339	301.0339	0.0725	0.0000	302.5568
Total	**0.2471**	**2.2629**	**2.1582**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.0339**	**301.0339**	**0.0725**	**0.0000**	**302.5568**

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	0.0185	0.0998	0.3546	3.9000e-004	0.0115	1.3300e-003	0.0128	3.2900e-003	1.2300e-003	4.5100e-003	0.0000	32.3889	32.3889	2.3000e-004	0.0000	32.3937
Worker	0.0142	0.0178	0.1804	5.8000e-004	0.0483	3.6000e-004	0.0486	0.0129	3.3000e-004	0.0132	0.0000	36.5185	36.5185	1.6300e-003	0.0000	36.5528
Total	**0.0327**	**0.1177**	**0.5350**	**9.7000e-004**	**0.0598**	**1.6900e-003**	**0.0615**	**0.0161**	**1.5600e-003**	**0.0177**	**0.0000**	**68.9074**	**68.9074**	**1.8600e-003**	**0.0000**	**68.9465**

3.4 Building Construction - 2022

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	0.2209	2.0197	2.1226	3.4900e-003		0.1047	0.1047		0.0986	0.0986	0.0000	299.9946	299.9946	0.0718	0.0000	301.5017
Total	**0.2209**	**2.0197**	**2.1226**	**3.4900e-003**		**0.1047**	**0.1047**		**0.0986**	**0.0986**	**0.0000**	**299.9946**	**299.9946**	**0.0718**	**0.0000**	**301.5017**

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	0.0169	0.0895	0.3316	3.8000e-004	0.0115	1.3100e-003	0.0128	3.2800e-003	1.2100e-003	4.4800e-003	0.0000	32.3426	32.3426	2.3000e-004	0.0000	32.3476
Worker	0.0134	0.0167	0.1690	5.8000e-004	0.0481	3.6000e-004	0.0485	0.0128	3.3000e-004	0.0131	0.0000	35.8301	35.8301	1.5600e-003	0.0000	35.8629
Total	**0.0303**	**0.1062**	**0.5005**	**9.6000e-004**	**0.0596**	**1.6700e-003**	**0.0612**	**0.0161**	**1.5400e-003**	**0.0176**	**0.0000**	**68.1728**	**68.1728**	**1.7900e-003**	**0.0000**	**68.2104**

3.4 Building Construction - 2023

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	0.1206	1.1021	1.2481	2.0700e-003		0.0537	0.0537		0.0505	0.0505	0.0000	177.7504	177.7504	0.0422	0.0000	178.6370
Total	**0.1206**	**1.1021**	**1.2481**	**2.0700e-003**		**0.0537**	**0.0537**		**0.0505**	**0.0505**	**0.0000**	**177.7504**	**177.7504**	**0.0422**	**0.0000**	**178.6370**

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	9.3500e-003	0.0484	0.1849	2.3000e-004	6.7900e-003	7.4000e-004	7.5400e-003	1.9400e-003	6.8000e-004	2.6300e-003	0.0000	19.2067	19.2067	1.3000e-004	0.0000	19.2095
Worker	7.5200e-003	9.3200e-003	0.0943	3.4000e-004	0.0285	2.1000e-004	0.0287	7.5800e-003	2.0000e-004	7.7800e-003	0.0000	20.9304	20.9304	8.9000e-004	0.0000	20.9491
Total	**0.0169**	**0.0578**	**0.2792**	**5.7000e-004**	**0.0353**	**9.5000e-004**	**0.0362**	**9.5200e-003**	**8.8000e-004**	**0.0104**	**0.0000**	**40.1372**	**40.1372**	**1.0200e-003**	**0.0000**	**40.1586**

3.5 Paving - 2023

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	0.0537	0.5299	0.7571	1.1800e-003		0.0266	0.0266		0.0244	0.0244	0.0000	103.8840	103.8840	0.0336	0.0000	104.5896
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0537**	**0.5299**	**0.7571**	**1.1800e-003**		**0.0266**	**0.0266**		**0.0244**	**0.0244**	**0.0000**	**103.8840**	**103.8840**	**0.0336**	**0.0000**	**104.5896**

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	1.6500e-003	2.0500e-003	0.0207	8.0000e-005	6.2600e-003	5.0000e-005	6.3100e-003	1.6700e-003	4.0000e-005	1.7100e-003	0.0000	4.5979	4.5979	1.9000e-004	0.0000	4.6020
Total	**1.6500e-003**	**2.0500e-003**	**0.0207**	**8.0000e-005**	**6.2600e-003**	**5.0000e-005**	**6.3100e-003**	**1.6700e-003**	**4.0000e-005**	**1.7100e-003**	**0.0000**	**4.5979**	**4.5979**	**1.9000e-004**	**0.0000**	**4.6020**

3.5 Paving - 2024

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	0.0552	0.5327	0.8165	1.2700e-003		0.0262	0.0262		0.0241	0.0241	0.0000	111.7226	111.7226	0.0361	0.0000	112.4814
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0552**	**0.5327**	**0.8165**	**1.2700e-003**		**0.0262**	**0.0262**		**0.0241**	**0.0241**	**0.0000**	**111.7226**	**111.7226**	**0.0361**	**0.0000**	**112.4814**

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	1.6900e-003	2.0900e-003	0.0211	8.0000e-005	6.7300e-003	5.0000e-005	6.7800e-003	1.7900e-003	5.0000e-005	1.8400e-003	0.0000	4.8836	4.8836	2.0000e-004	0.0000	4.8879
Total	**1.6900e-003**	**2.0900e-003**	**0.0211**	**8.0000e-005**	**6.7300e-003**	**5.0000e-005**	**6.7800e-003**	**1.7900e-003**	**5.0000e-005**	**1.8400e-003**	**0.0000**	**4.8836**	**4.8836**	**2.0000e-004**	**0.0000**	**4.8879**

3.6 Architectural Coating - 2024

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	2.4815					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0134	0.0902	0.1340	2.2000e-004		4.5100e-003	4.5100e-003		4.5100e-003	4.5100e-003	0.0000	18.8941	18.8941	1.0600e-003	0.0000	18.9164
Total	**2.4948**	**0.0902**	**0.1340**	**2.2000e-004**		**4.5100e-003**	**4.5100e-003**		**4.5100e-003**	**4.5100e-003**	**0.0000**	**18.8941**	**18.8941**	**1.0600e-003**	**0.0000**	**18.9164**

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	1.3200e-003	1.6300e-003	0.0165	6.0000e-005	5.2400e-003	4.0000e-005	5.2800e-003	1.4000e-003	4.0000e-005	1.4300e-003	0.0000	3.8041	3.8041	1.6000e-004	0.0000	3.8074
Total	**1.3200e-003**	**1.6300e-003**	**0.0165**	**6.0000e-005**	**5.2400e-003**	**4.0000e-005**	**5.2800e-003**	**1.4000e-003**	**4.0000e-005**	**1.4300e-003**	**0.0000**	**3.8041**	**3.8041**	**1.6000e-004**	**0.0000**	**3.8074**

3.6 Architectural Coating - 2025

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	1.2072					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1500e-003	0.0412	0.0651	1.1000e-004		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	9.1917	9.1917	5.0000e-004	0.0000	9.2022
Total	**1.2133**	**0.0412**	**0.0651**	**1.1000e-004**		**1.8500e-003**	**1.8500e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**9.1917**	**9.1917**	**5.0000e-004**	**0.0000**	**9.2022**

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	6.1000e-004	7.5000e-004	7.6500e-003	3.0000e-005	2.5500e-003	2.0000e-005	2.5700e-003	6.8000e-004	2.0000e-005	7.0000e-004	0.0000	1.8303	1.8303	7.0000e-005	0.0000	1.8319
Total	**6.1000e-004**	**7.5000e-004**	**7.6500e-003**	**3.0000e-005**	**2.5500e-003**	**2.0000e-005**	**2.5700e-003**	**6.8000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**1.8303**	**1.8303**	**7.0000e-005**	**0.0000**	**1.8319**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	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	0.7383	1.5733	7.1984	0.0193	1.3920	0.0212	1.4132	0.3728	0.0196	0.3924	0.0000	1,325.3841	1,325.3841	0.0531	0.0000	1,326.4990
Unmitigated	0.7433	1.6017	7.3107	0.0197	1.4204	0.0216	1.4420	0.3804	0.0199	0.4004	0.0000	1,351.7139	1,351.7139	0.0541	0.0000	1,352.8493

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,345.37	1,345.37	1345.37	3,853,870	3,776,792
Total	1,345.37	1,345.37	1,345.37	3,853,870	3,776,792

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456027	0.079225	0.189471	0.160757	0.074654	0.010795	0.011376	0.000953	0.001380	0.000780	0.008930	0.000740	0.004913

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	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	207.7854	207.7854	0.0124	2.5500e-003	208.8367
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	210.0935	210.0935	0.0125	2.5800e-003	211.1565
NaturalGas Mitigated	0.0114	0.0971	0.0413	6.2000e-004		7.8500e-003	7.8500e-003		7.8500e-003	7.8500e-003	0.0000	112.4225	112.4225	2.1500e-003	2.0600e-003	113.1067
NaturalGas Unmitigated	0.0126	0.1076	0.0458	6.9000e-004		8.7000e-003	8.7000e-003		8.7000e-003	8.7000e-003	0.0000	124.6525	124.6525	2.3900e-003	2.2900e-003	125.4112

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	2.3359e+006	0.0126	0.1076	0.0458	6.9000e-004		8.7000e-003	8.7000e-003		8.7000e-003	8.7000e-003	0.0000	124.6525	124.6525	2.3900e-003	2.2900e-003	125.4112
Total		**0.0126**	**0.1076**	**0.0458**	**6.9000e-004**		**8.7000e-003**	**8.7000e-003**		**8.7000e-003**	**8.7000e-003**	**0.0000**	**124.6525**	**124.6525**	**2.3900e-003**	**2.2900e-003**	**125.4112**

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	2.10672e+006	0.0114	0.0971	0.0413	6.2000e-004		7.8500e-003	7.8500e-003		7.8500e-003	7.8500e-003	0.0000	112.4225	112.4225	2.1500e-003	2.0600e-003	113.1067
Total		**0.0114**	**0.0971**	**0.0413**	**6.2000e-004**		**7.8500e-003**	**7.8500e-003**		**7.8500e-003**	**7.8500e-003**	**0.0000**	**112.4225**	**112.4225**	**2.1500e-003**	**2.0600e-003**	**113.1067**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	949133	210.0935	0.0125	2.5800e-003	211.1565
Total		**210.0935**	**0.0125**	**2.5800e-003**	**211.1565**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	938706	207.7854	0.0124	2.5500e-003	208.8367
Total		**207.7854**	**0.0124**	**2.5500e-003**	**208.8367**

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	1.3289	0.0113	0.9764	5.0000e-005		0.0119	0.0119		0.0118	0.0118	0.0000	94.4528	94.4528	3.3300e-003	1.7000e-003	95.0505
Unmitigated	9.5393	0.1228	11.1018	4.0100e-003		1.4280	1.4280		1.4280	1.4280	135.3175	58.3390	193.6565	0.1264	0.0106	199.6110

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	0.3689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.2198	0.1115	10.1259	3.9600e-003		1.4226	1.4226		1.4226	1.4226	135.3175	56.7502	192.0676	0.1249	0.0106	197.9896
Landscaping	0.0297	0.0113	0.9759	5.0000e-005		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	1.5889	1.5889	1.5500e-003	0.0000	1.6214
Total	**9.5393**	**0.1228**	**11.1018**	**4.0100e-003**		**1.4280**	**1.4280**		**1.4280**	**1.4280**	**135.3175**	**58.3390**	**193.6565**	**0.1264**	**0.0106**	**199.6110**

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	0.3689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.3800e-003	0.0000	5.1000e-004	0.0000		6.4800e-003	6.4800e-003		6.4100e-003	6.4100e-003	0.0000	92.8639	92.8639	1.7800e-003	1.7000e-003	93.4291
Landscaping	0.0297	0.0113	0.9759	5.0000e-005		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	1.5889	1.5889	1.5500e-003	0.0000	1.6214
Total	**1.3289**	**0.0113**	**0.9764**	**5.0000e-005**		**0.0119**	**0.0119**		**0.0118**	**0.0118**	**0.0000**	**94.4528**	**94.4528**	**3.3300e-003**	**1.7000e-003**	**95.0505**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.0995	0.2789	6.7300e-003	25.0443
Unmitigated	17.0995	0.2790	6.7400e-003	25.0486

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	8.53518 / 5.38087	17.0995	0.2790	6.7400e-003	25.0486
Total		**17.0995**	**0.2790**	**6.7400e-003**	**25.0486**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	8.53518 / 5.38087	17.0995	0.2789	6.7300e-003	25.0443
Total		**17.0995**	**0.2789**	**6.7300e-003**	**25.0443**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.0304	1.1247	0.0000	42.6484
Unmitigated	19.0304	1.1247	0.0000	42.6484

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	93.75	19.0304	1.1247	0.0000	42.6484
Total		**19.0304**	**1.1247**	**0.0000**	**42.6484**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	93.75	19.0304	1.1247	0.0000	42.6484
Total		**19.0304**	**1.1247**	**0.0000**	**42.6484**

Promontory Village 7 - No Action Taken

El Dorado-Mountain County County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	131.00	Dwelling Unit	42.53	235,800.00	375

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	70
Climate Zone	1			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Development Footprint = 164

Vehicle Trips - Trip generation per T. Kear Transportation Planning and Management Inc.

Vechicle Emission Factors - Non Pavley & LCFS emission standards

Energy Use - Historical Energy Data

Vechicle Emission Factors -

Vechicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleEF	LDA	229.41	340.04
tblVehicleEF	LDA	52.06	73.52
tblVehicleEF	LDT1	281.87	393.35
tblVehicleEF	LDT1	62.97	84.89
tblVehicleEF	LDT2	347.61	462.88
tblVehicleEF	LDT2	77.22	100.54
tblVehicleEF	MDV	465.17	589.78
tblVehicleEF	MDV	102.74	127.35
tblVehicleTrips	ST_TR	10.08	10.27
tblVehicleTrips	SU_TR	8.77	10.27
tblVehicleTrips	WD_TR	9.57	10.27

2.0 Emissions Summary

2.1 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	9.5393	0.1228	11.1018	4.0100e-003		1.4280	1.4280		1.4280	1.4280	135.3175	58.3390	193.6565	0.1264	0.0106	199.6110
Energy	0.0135	0.1155	0.0491	7.4000e-004		9.3300e-003	9.3300e-003		9.3300e-003	9.3300e-003	0.0000	415.7641	415.7641	0.0153	5.0900e-003	417.6636
Mobile	0.7433	1.6017	7.3107	0.0197	1.4204	0.0216	1.4420	0.3804	0.0199	0.4004	0.0000	1,750.8099	1,750.8099	0.0541	0.0000	1,751.9452
Waste						0.0000	0.0000		0.0000	0.0000	19.0304	0.0000	19.0304	1.1247	0.0000	42.6484
Water						0.0000	0.0000		0.0000	0.0000	2.7078	18.9142	21.6220	0.2790	6.7400e-003	29.5711
Total	**10.2960**	**1.8400**	**18.4616**	**0.0244**	**1.4204**	**1.4589**	**2.8794**	**0.3804**	**1.4572**	**1.8376**	**157.0557**	**2,243.8271**	**2,400.8828**	**1.5994**	**0.0225**	**2,441.4393**

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	9.5393	0.1228	11.1018	4.0100e-003		1.4280	1.4280		1.4280	1.4280	135.3175	58.3390	193.6565	0.1264	0.0106	199.6110
Energy	0.0135	0.1155	0.0491	7.4000e-004		9.3300e-003	9.3300e-003		9.3300e-003	9.3300e-003	0.0000	415.7641	415.7641	0.0153	5.0900e-003	417.6636
Mobile	0.7433	1.6017	7.3107	0.0197	1.4204	0.0216	1.4420	0.3804	0.0199	0.4004	0.0000	1,750.8099	1,750.8099	0.0541	0.0000	1,751.9452
Waste						0.0000	0.0000		0.0000	0.0000	19.0304	0.0000	19.0304	1.1247	0.0000	42.6484
Water						0.0000	0.0000		0.0000	0.0000	2.7078	18.9142	21.6220	0.2789	6.7300e-003	29.5667
Total	**10.2960**	**1.8400**	**18.4616**	**0.0244**	**1.4204**	**1.4589**	**2.8794**	**0.3804**	**1.4572**	**1.8376**	**157.0557**	**2,243.8271**	**2,400.8828**	**1.5994**	**0.0225**	**2,441.4349**

	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**	**0.04**	**0.00**

3.0 Operational Detail - Mobile

3.1 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	0.7433	1.6017	7.3107	0.0197	1.4204	0.0216	1.4420	0.3804	0.0199	0.4004	0.0000	1,750.8099	1,750.8099	0.0541	0.0000	1,751.9452
Unmitigated	0.7433	1.6017	7.3107	0.0197	1.4204	0.0216	1.4420	0.3804	0.0199	0.4004	0.0000	1,750.8099	1,750.8099	0.0541	0.0000	1,751.9452

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,345.37	1,345.37	1345.37	3,853,870	3,853,870
Total	1,345.37	1,345.37	1,345.37	3,853,870	3,853,870

3.3 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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	42.60	21.00	36.40	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456027	0.079225	0.189471	0.160757	0.074654	0.010795	0.011376	0.000953	0.001380	0.000780	0.008930	0.000740	0.004913

4.0 Energy Detail

Historical Energy Use: Y

4.1 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	282.0523	282.0523	0.0128	2.6400e-003	283.1381
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	282.0523	282.0523	0.0128	2.6400e-003	283.1381
NaturalGas Mitigated	0.0135	0.1155	0.0491	7.4000e-004		9.3300e-003	9.3300e-003		9.3300e-003	9.3300e-003	0.0000	133.7118	133.7118	2.5600e-003	2.4500e-003	134.5256
NaturalGas Unmitigated	0.0135	0.1155	0.0491	7.4000e-004		9.3300e-003	9.3300e-003		9.3300e-003	9.3300e-003	0.0000	133.7118	133.7118	2.5600e-003	2.4500e-003	134.5256

4.2 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	2.50566e+006	0.0135	0.1155	0.0491	7.4000e-004		9.3300e-003	9.3300e-003		9.3300e-003	9.3300e-003	0.0000	133.7118	133.7118	2.5600e-003	2.4500e-003	134.5256
Total		**0.0135**	**0.1155**	**0.0491**	**7.4000e-004**		**9.3300e-003**	**9.3300e-003**		**9.3300e-003**	**9.3300e-003**	**0.0000**	**133.7118**	**133.7118**	**2.5600e-003**	**2.4500e-003**	**134.5256**

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	2.50566e+006	0.0135	0.1155	0.0491	7.4000e-004		9.3300e-003	9.3300e-003		9.3300e-003	9.3300e-003	0.0000	133.7118	133.7118	2.5600e-003	2.4500e-003	134.5256
Total		**0.0135**	**0.1155**	**0.0491**	**7.4000e-004**		**9.3300e-003**	**9.3300e-003**		**9.3300e-003**	**9.3300e-003**	**0.0000**	**133.7118**	**133.7118**	**2.5600e-003**	**2.4500e-003**	**134.5256**

4.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	969547	282.0523	0.0128	2.6400e-003	283.1381
Total		**282.0523**	**0.0128**	**2.6400e-003**	**283.1381**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	969547	282.0523	0.0128	2.6400e-003	283.1381
Total		**282.0523**	**0.0128**	**2.6400e-003**	**283.1381**

5.0 Area Detail

5.1 Mitigation Measures Area

	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	9.5393	0.1228	11.1018	4.0100e-003		1.4280	1.4280		1.4280	1.4280	135.3175	58.3390	193.6565	0.1264	0.0106	199.6110
Unmitigated	9.5393	0.1228	11.1018	4.0100e-003		1.4280	1.4280		1.4280	1.4280	135.3175	58.3390	193.6565	0.1264	0.0106	199.6110

5.2 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	0.3689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.2198	0.1115	10.1259	3.9600e-003		1.4226	1.4226		1.4226	1.4226	135.3175	56.7502	192.0676	0.1249	0.0106	197.9896
Landscaping	0.0297	0.0113	0.9759	5.0000e-005		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	1.5889	1.5889	1.5500e-003	0.0000	1.6214
Total	**9.5393**	**0.1228**	**11.1018**	**4.0100e-003**		**1.4280**	**1.4280**		**1.4280**	**1.4280**	**135.3175**	**58.3390**	**193.6565**	**0.1264**	**0.0106**	**199.6110**

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	0.3689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	8.2198	0.1115	10.1259	3.9600e-003		1.4226	1.4226		1.4226	1.4226	135.3175	56.7502	192.0676	0.1249	0.0106	197.9896
Landscaping	0.0297	0.0113	0.9759	5.0000e-005		5.3700e-003	5.3700e-003		5.3700e-003	5.3700e-003	0.0000	1.5889	1.5889	1.5500e-003	0.0000	1.6214
Total	**9.5393**	**0.1228**	**11.1018**	**4.0100e-003**		**1.4280**	**1.4280**		**1.4280**	**1.4280**	**135.3175**	**58.3390**	**193.6565**	**0.1264**	**0.0106**	**199.6110**

6.0 Water Detail

6.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.6220	0.2789	6.7300e-003	29.5667
Unmitigated	21.6220	0.2790	6.7400e-003	29.5711

6.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	8.53518 / 5.38087	21.6220	0.2790	6.7400e-003	29.5711
Total		**21.6220**	**0.2790**	**6.7400e-003**	**29.5711**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	8.53518 / 5.38087	21.6220	0.2789	6.7300e-003	29.5667
Total		**21.6220**	**0.2789**	**6.7300e-003**	**29.5667**

7.0 Waste Detail

7.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.0304	1.1247	0.0000	42.6484
Unmitigated	19.0304	1.1247	0.0000	42.6484

7.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	93.75	19.0304	1.1247	0.0000	42.6484
Total		**19.0304**	**1.1247**	**0.0000**	**42.6484**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	93.75	19.0304	1.1247	0.0000	42.6484
Total		**19.0304**	**1.1247**	**0.0000**	**42.6484**

P15020

Supplemental Traffic Impact Analysis:

Promontory Village 7
El Dorado Hills, California

Prepared for:
Russell-Promontory, LLC and
County of El Dorado, California

Prepared By

T.KEAR
TRANSPORTATION PLANNING
& MANAGEMENT, INC.

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THOMAS PERRY KEAR
C 68821
EXP 9/30/2017
CIVIL

April 2016

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T.KEAR
TRANSPORTATION PLANNING
& MANAGEMENT, INC.

Memorandum

TO: Natalie Porter, CDA Long Range Planning

Chirag Safi, Kittelson and Associates

CC: Larry Ito, Ardor Consulting Corp.

FROM: Tom Kear

Date: April 4, 2016

RE: Response to Comments on Draft Supplemental TIS for the Promontory Village 7

This memorandum details responses to the Community Development Agency's (CDA) March 8, 2016 comments on the draft supplemental traffic impact study (TIS) for the Promontory Village 7. The original comments are listed, followed by a description of changes made to the study and/or explanation in response to the comment.

The responses described below have all been incorporated into the final draft of the report. Please contact me if you any questions on these responses.

Comment 1

Comment: *Page 7, second to last paragraph, last sentence: should use the word "provide" instead of "provision".*

Response: The requested edit has been made in the final report.

Comment 2

Comment: *Page 8, first paragraph, densities average is 0.74 units per acre, not 1.34 units per acre number as documented.*

Response: The text on page 8 has been updated to reflect an average lot size of 1.34 acres and density of 0.74 units per acre.

Comment 3

Comment: *Peak hour turning movement counts at Harvard Way/El Dorado Hills Boulevard and Olson Lane/El Dorado Hills Boulevard are more than 2 years old. Therefore, as scoped these volumes shall be increased by an annual growth rate of 1.03% to account for passage of time. All subsequent analyses shall be revised accordingly.*

Response: The El Dorado Hills Boulevard/Harvard Way traffic count provided by El Dorado County is more than 2 years old. Though not fully documented in the report, a review of the annual growth rates in traffic over the last five years on El Dorado Hills was undertaken to identify a reasonable scaling factor for both this intersection and the El Dorado Hills Boulevard/Olson Way intersection. The five-year growth trends are slightly negative, with the most recent counts taken in 2014 being lower than any year since 2010, and significantly lower than the 2013 counts. Data from the County's Five-Year Traffic Count Book are attached for reference. To be conservative, the 2013 counts provided by the County were used as is, rather than applying a negative growth rate. No changes have been made to the report in response to this comment.

Comment 4

Comment: *Table 7: Intersection numbers have been switched for Olson lane and Harvard Way intersections with El Dorado Hills Boulevard. Olson Lane is #9, while Harvard Way is #8.*

Response: The intersection number in Tables 7, 9, 11, 13, 14, 16, 17, and 19 has been corrected.

Comment 5

Comment: *References of Table X and Page XX in the Appendix section about Lot H ought to be replaced with actual numbers*

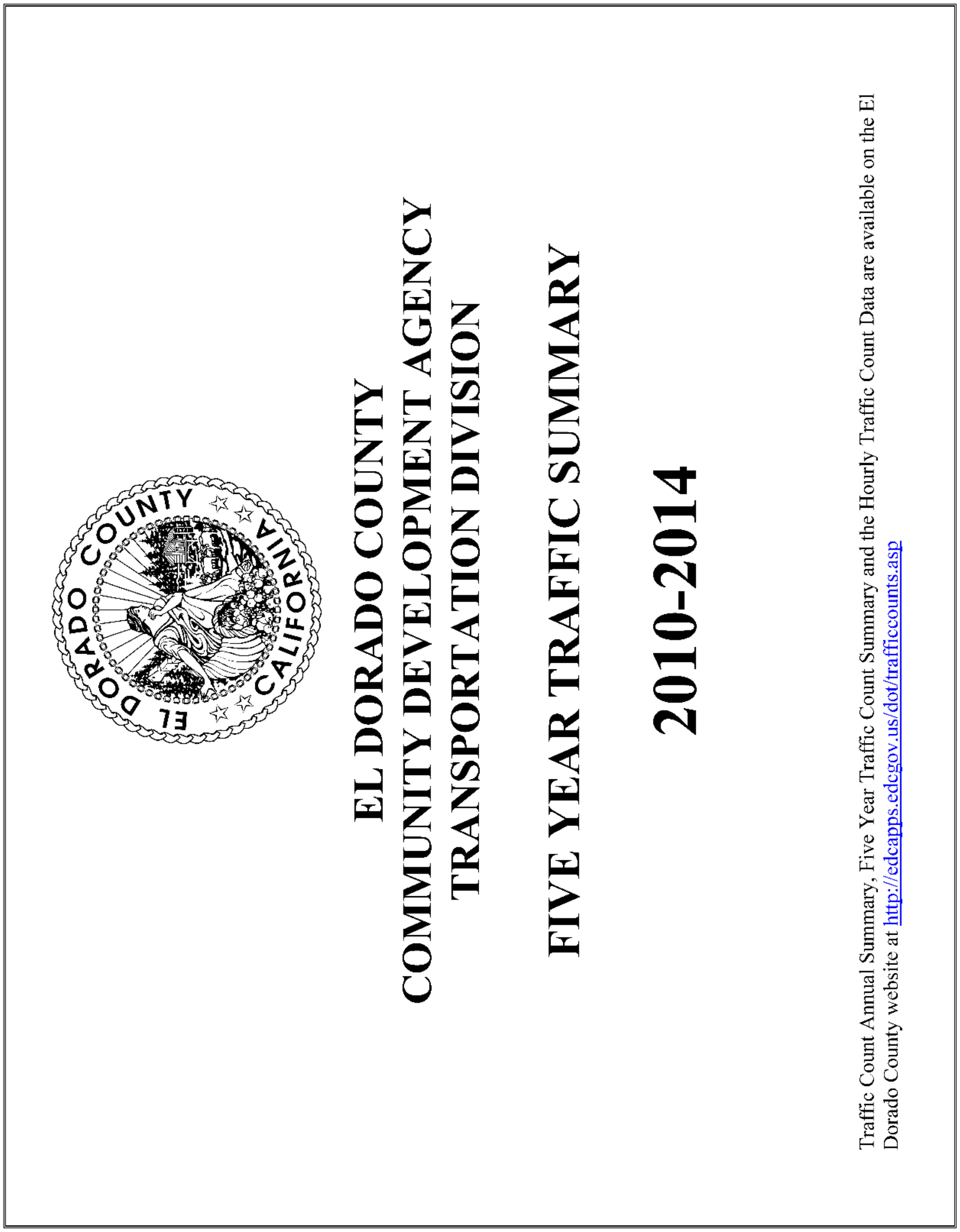
Response: The references in the appendix have been updated.

Comment 6

Comment: *Why would it be necessary to present HCM 2000 results in the appendices when the report indicates that HCM 2010 methods were used?*

Response: Signalized intersections were analyzed utilizing both the HCM 2000 and HCM 2010 calculation methods for QA/QC. All of the results were included in the appendix but only HCM 2010 results were included in the body of the report. The HCM 2000 results have been removed from the appendix materials.

The Final Draft of the TIA accompanies this memorandum and has been stamped by a Licensed Civil Engineer. Please contact me if you any questions on these responses.



EL DORADO COUNTY
COMMUNITY DEVELOPMENT AGENCY
TRANSPORTATION DIVISION

FIVE YEAR TRAFFIC SUMMARY

2010-2014

Traffic Count Annual Summary, Five Year Traffic Count Summary and the Hourly Traffic Count Data are available on the El Dorado County website at http://edcapps.edcgov.us/dot/trafficcounts.asp

Road Name	Count Station	Mile Post	Location	Count Period	2014 Count	2013 Count	2012 Count	2011 Count	2010 Count	P.C.I.
El Dorado Hills Blvd.	1200219	0.19	200 Ft. N. of Saratoga Way	DEC	**30,022**	30,491	32,098	31,726	31,136	**64**
El Dorado Hills Blvd.	1300219	1.02	50 Ft. S. of Wilson Blvd.	DEC	**22,502**	22,086	22,544	21,953	22,569	**56**
El Dorado Hills Blvd.	1340219	1.25	50 Ft. N. of Wilson Blvd.	DEC	**21,824**	21,430	21,907	21,061	21,844	**56**
El Dorado Hills Blvd.	1380219	1.56	50 Ft. S. of Olson Ln.	DEC	**21,910**	21,498	N.C.	21,874	21,931	**56**
El Dorado Hills Blvd.	1400219	1.62	50 Ft. N. of Olson Ln.	DEC	**19,733**	19,524	N.C.	19,755	19,819	**56**
El Dorado Hills Blvd.	1500219	2.13	100 Ft. N. of Harvard Way	DEC	**17,458**	18,489	17,902	17,743	17,776	**56**
El Dorado Hills Blvd.	1600219	3.56	300 Ft. S. of Francisco Dr.	DEC	**15,444**	16,866	16,048	15,170	15,893	**56**
El Dorado Hills Blvd.	1700219	4.18	100 Ft. S. of Green Valley Rd.	DEC	**4,810**	4,804	4,991	5,100	5,109	**68**
El Dorado Road	1100008	0.11	600 Ft. N. of Pleasant Valley Rd.	FEB	**2,032**	2,114	2,334	2,370	2,490	**77**
El Dorado Road	1200008	1.66	1,000 Ft. S. of U.S. 50	FEB	**4,385**	4,520	5,005	4,940	5,092	**91**
El Dorado Road	1300008	1.97	50 Ft. S. of Missouri Flat Rd.	FEB	**2,258**	2,338	2,427	2,470	2,352	**81**
El Dorado Road	1400008	2.92	50 Ft. N. of Missouri Flat Rd.	FEB	N.C.	2,599	2,783	3,028	2,751	**71**
Enterprise Drive	1101464	0.02	100 Ft. E. of Forni Rd.	FEB	**2,962**	2,837	N.C.	3,042	3,042	**31**
Enterprise Drive	1301464	0.73	300 Ft. W. of Missouri Flat Rd.	FEB	**2,582**	2,655	2,589	2,722	2,972	**31**
Fairplay Road	1200106	0.02	100 Ft. S. of Mt Aukum Rd.	MAY	**2,090**	1,919	2,007	N.C.	2,109	**52**
Forebay Road	1101680	0.02	100 Ft. N. of Pony Express Tr.	APR	N.C.	1,976	2,043	2,001	1,930	**86**
Forni Road	1100132	0.03	200 Ft. N. of S.R. 49	APR	**3,393**	3,255	3,275	3,294	3,318	**82**
Forni Road	1200132	1.96	300 Ft. W. of Missouri Flat Rd.	APR	**9,697**	9,554	9,533	9,486	8,928	**85**
Forni Road	1300132	2.23	30 Ft. W. of Arroyo Vista Way	APR	**1,477**	N.C.	2,049	2,103	1,709	**41**
Forni Road	1400132	3.91	W. of P-ville Dr. @ City Limits	APR	**958**	N.C.	1,399	1,646	1,285	**41**

EXECUTIVE SUMMARY

The proposed project would consist of 131 single family homes on approximately 176 acres of the Promontory Specific Plan Village 7 (Assessor's Parcel Number 124-390-04-100, 124-390-06-100, and 124-390-08-100). A preliminary site plan is provided as **Figure ES-1**. General Plan land use for these parcels is shown as “AP” or adopted plan, referring to the Promontory Specific Plan which is incorporated into the General Plan. Zoning for these parcels also references back to the Specific Plan. Because the land use and zoning are incorporated from the Specific Plan, the Targeted General Plan Amendment & Zoning Ordinance Update (TGPA-ZOU) does alter the designations for the project parcels. The Promontory Specific Plan was adopted under the policies of the 1996 General Plan.

The 131 homes are anticipated to produce 1,346 daily vehicle trips, including 104 AM peak hour trips and 136 PM peak hour trips. Project access will be via four gated entrances: one onto Sophia Parkway (access A), servicing eight lots, the second to Alexandra Drive (access B), the third and fourth (access C and D) would both be to Beatty Drive. Access C primarily serves the Lot “C” portion of the project.

Concurrency

Concurrency[1] requirements for the project are governed by the Promontory Environmental Impact Report (the EIR) rather than the Measure Y General Plan policies. The El Dorado County Board of Supervisors adopted the Promontory Specific Plan and development agreement before Measure Y took effect. Because Promontory Village 7 predates Measure Y, the project is not bound by its policies. However, several mitigation measures from the EIR control the phasing of off-site road improvements for the project and thereby serve a similar function as Measure Y policies. In 1998, the El Dorado County voters enacted the "Control Traffic Congestion Initiative" (Measure Y), which added three policies to the 1996 General Plan. They included:

1. Policy TC-Xa(1): A prohibition of residential development projects of five or more units causing, or worsening, level-of-service (LOS) F traffic congestion during weekday, peak-hour periods;
2. Policy TC-Xa(2): A prohibition against adding roads to the list of roads allowed to operate at LOS F without voter approval; and
3. Policy TC-Xa(3): A requirement that developers pay fees to mitigate traffic impacts of new development.

In regards of the project’s responsibility to mitigate all new off-sight traffic impacts with a nexus to the project, the language of Mitigation Measures 4.5.1a through 4.5.15 impose substantially the same requirements as the General Plan Measure Y Policies. However, the scope of required improvements and phasing studies is limited to the area addressed by the EIR and any addendums.

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[1] Concurrency refers to the timely provision of public facilities and services relative to demand for them.

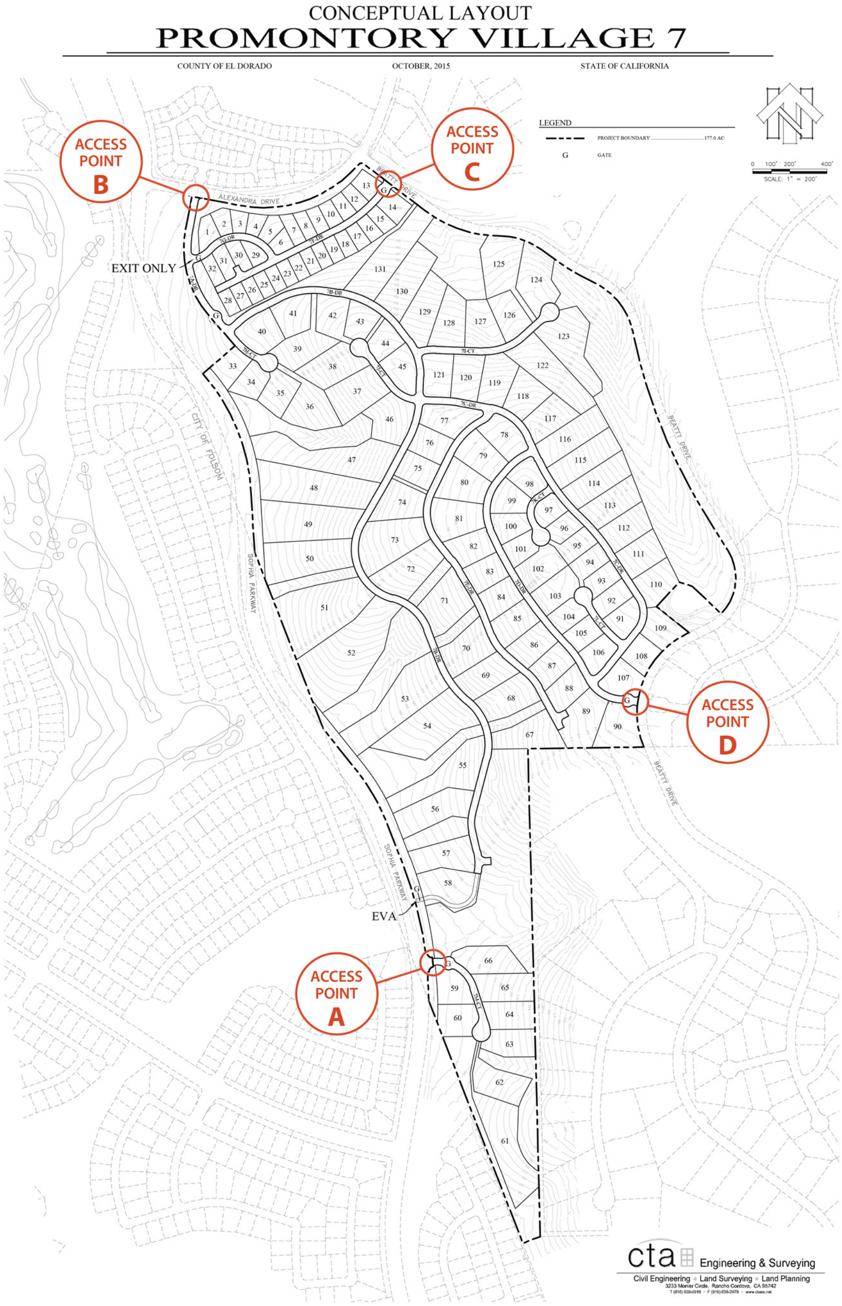

Figure ES-1 Preliminary site plan

Scope of Analysis

This study was scoped and performed in accordance with the El Dorado County Department of Transportation Traffic Impact Study Protocols and Procedures, and study specific guidance from County of El Dorado Community Development Agency staff. The traffic study area (**Figure ES-2**), in El Dorado County, California, was selected in coordination with El Dorado County staff and with consideration of other recent studies within the area and the requirements to verify mitigation measures from the Promontory EIR. This Traffic Impact Analysis looked at nine study intersections and six study segments. All study intersections were evaluated under Existing 2015 conditions with and without the proposed project, as well as Existing Plus Approved Projects (EPAP) 2025 conditions with and without the project.

Study intersections:

1. Access A & Sophia Parkway
2. Alexandra Drive & Sophia Parkway
3. Access B & Alexandra Drive
4. Access C & Beatty Drive
5. Access D & Beatty Drive /Powers Drive
6. Green Valley Road & Sophia Pkwy
7. El Dorado Hills Boulevard & Francisco Drive
8. El Dorado Hills Boulevard & Olson Lane
9. El Dorado Hills Boulevard & Harvard Way

Study segments:

A. Olson Lane – El Dorado Hills Boulevard to Gillette Drive
B. Ridgeview Drive – south of Gillette Drive
C. Powers Drive – south of Mossridge Way
D. Betty Drive – south of Alexandra Drive
E. Sophia Parkway – south of Alexandra Drive
F. Sophia Parkway – north of Alexandra Drive

Analysis considered delay, level-of-service, and queueing at all study intersections. Signal warrants were evaluated for all unsignalized intersections.

Findings

Existing 2015 Plus Project

There are no impacts or required mitigation under the Existing 2015 Plus Project Conditions Scenario. Recommended conditions of approval consist of payment of TIM Fees.

EPAP 2025 Plus Project

There are no impacts or required mitigation under the EPAP 2025 Plus Project Conditions Scenario. Recommended conditions of approval consist of payment of TIM Fees.

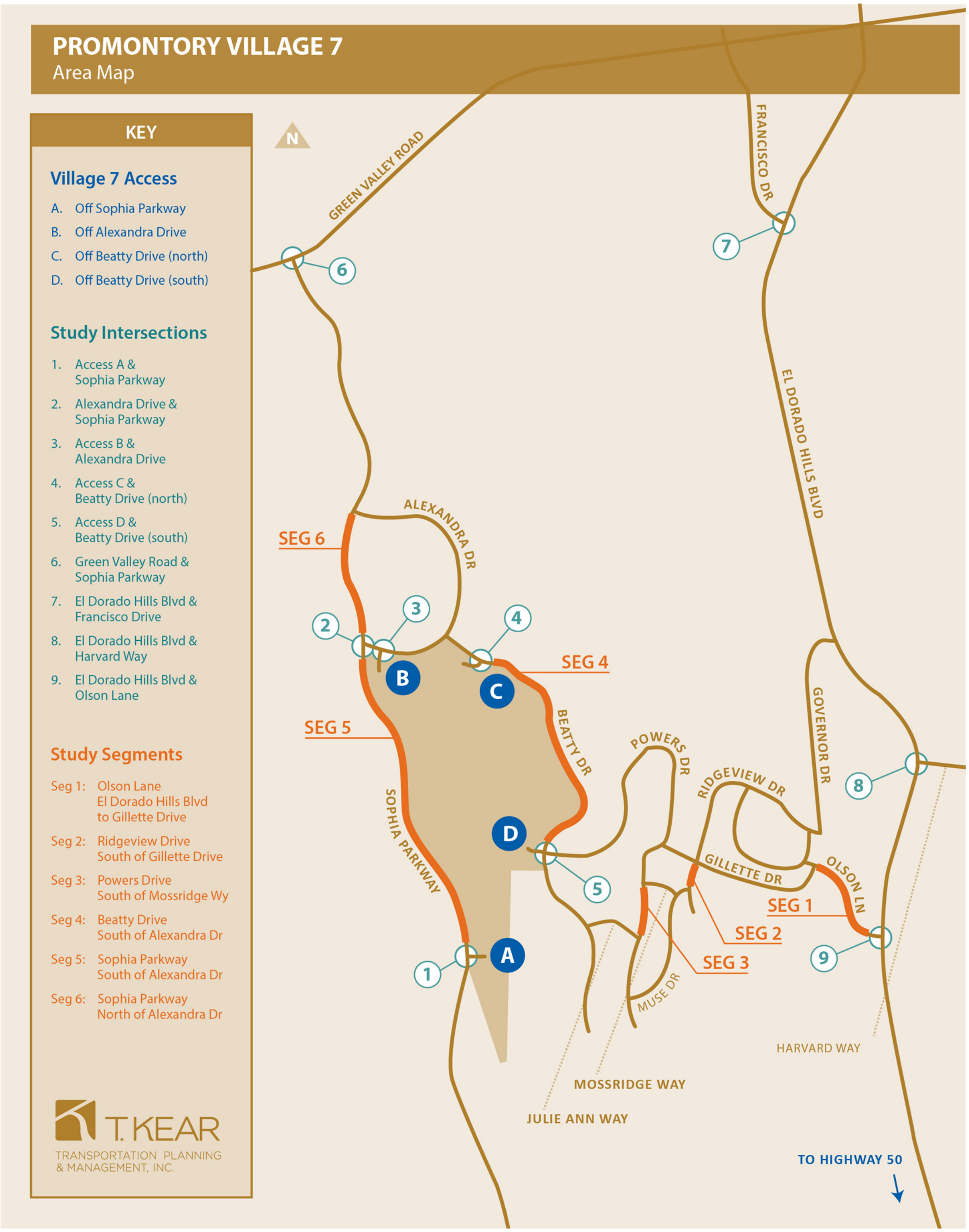

Figure ES-2 Study Area

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1.0 INTRODUCTION

This report presents the results of a Traffic Impact Analysis undertaken for the County of El Dorado and Russell Promontory LLC, in support of tentative map approval for the Promontory Village 7 development (the project).

The project consists of the Village 7 of the Promontory Specific Plan, located south of Alexandra Drive, between Sophia Parkway and Beatty Drive in the El Dorado Hills community region of El Dorado County. Village 7 is the last remaining tentative map within the Promontory Specific Plan area. The Promontory Specific Plan and associated Development Agreement predate the adoption of Measure Y in 1998. The Board of Supervisors approved The Promontory Specific Plan on November 4, 1997, and an amended Specific Plan on September 29, 1999. The amended plan provides for 1,100 total dwelling units to be created within eight residential villages designated as Villages 1 through 8,and a Village Center. The Promontory was subsequently incorporated into The El Dorado County General Plan. No substantive changes have been made to the scope or purpose of the project since its inception in 1997. As proposed, the project is consistent with the 1996 and 2004 General Plan and has been incorporated into the El Dorado County planning process for more than 15 years. **Figure 1** presents a vicinity map indicating the location of the project and adjacent roadways. The development will consist of 131 dwelling units.

1.1 Specific Plan EIR Mitigation Measures, Measure Y, and Concurrency

Concurrency[2] requirements for the project are governed by the Promontory Environmental Impact Report (the EIR) rather than the Measure Y General Plan policies.

The El Dorado County Board of Supervisors adopted the Promontory Specific Plan and development agreement before Measure Y took effect. Because Promontory Village 7 predates Measure Y, the project is not bound by its policies. However, several mitigation measures from the EIR control the phasing of off-site road improvements for the project and thereby serve a similar function as Measure Y policies. In 1998, the El Dorado County voters enacted the "Control Traffic Congestion Initiative" (Measure Y), which added three policies to the 1996 General Plan. They included:

4. Policy TC-Xa(1): A prohibition of residential development projects of five or more units causing, or worsening, level-of-service (LOS) F traffic congestion during weekday, peak-hour periods;
5. Policy TC-Xa(2): A prohibition against adding roads to the list of roads allowed to operate at LOS F without voter approval; and
6. Policy TC-Xa(3): A requirement that developers pay fees to mitigate traffic impacts of new development.

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[2] Concurrency refers to the timely provision of public facilities and services relative to demand for them.

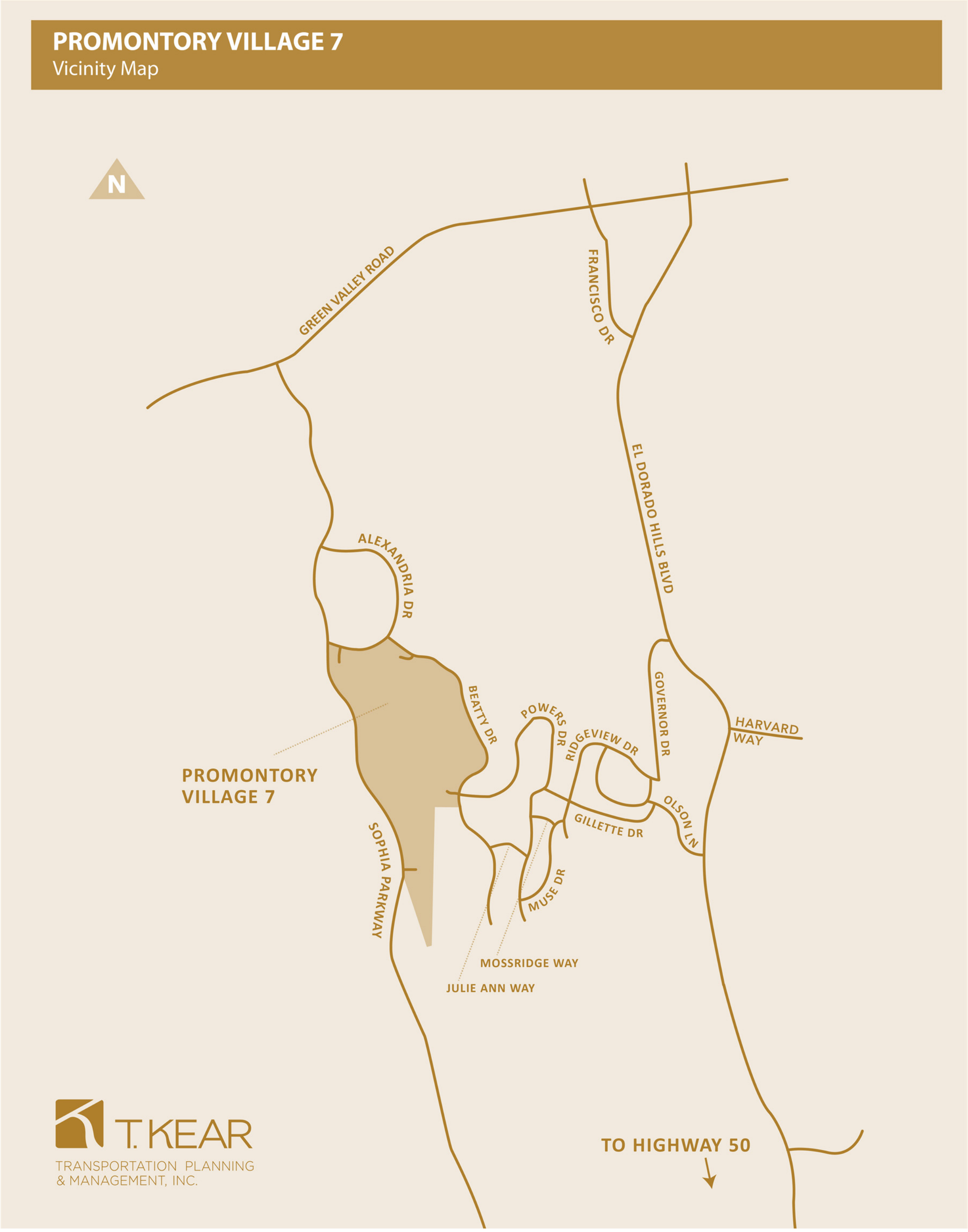

Figure 1. Project Location Map

The language of Mitigation Measures 4.5.1a through 4.5.15 impose substantially the same requirements in regards of the project's responsibility to mitigate all new off-sight traffic impacts with a nexus to the project, but limits the scope of required improvements and phasing studies to the area addressed by the EIR and any addendums. Because of the correspondence between Measure Y and mitigation measure 4.5.1a through 4.5.15, guidance and definitions developed for implementation of Measure Y are applied in this Traffic Impact Study.

1.2 Specific Plan Mitigation Monitoring/Status

Status of the mitigation measures identified by the Specific Plan EIR is detailed in **Table 1** below to support concurrency requirements and insure that all mitigations are completed with this final tentative map from the Promontory Specific Plan. Each mitigation measure from the transportation and circulation section of the EIR is listed along with the status of the mitigation. Most of the mitigations have been completed; however, one was identified as being "in process".

- Mitigation 4.5.1b, phase 8 improvements, requires construction of a connection between Village 8 and the City of Folsom. Both Village 8 and the required connection are currently under construction.

As described above, the mitigation identified as being in the process of being implemented is currently under construction. Developer obligations are considered complete when improvements are fully funded and either under construction or programed for construction with the current CIP and MTIP.

Table 1. Status of Promontory Specific Plan EIR mitigation measures

Mitigation Measure	Complete?	Notes/Comments
4.5.1a: During the review of tentative maps for each phase of the Promontory Specific Plan, a traffic study shall be performed to determine the amount of project traffic that will be added to the local streets in El Dorado Hills. If any local residential streets would experience a total daily volume in excess of 4,000 as a result of implementing a particular phase of the Promontory Specific Plan, then the tentative map for that phase shall not be approved unless traffic circulation measures are implemented which will prevent the total daily traffic volume on local residential streets from reaching 4,000 average daily trips. Traffic circulation measures would include but are not limited to: additional connections to other local residential streets (temporarily or permanently); elimination of connections to local residential streets (temporarily or permanently); construction of Russell Ranch Boulevard Extension to Green Valley Road; construction of Russell Ranch Boulevard to the City of Folsom's East Natoma Street Extension (and/or connection to U.S. Highway 50); modification of project phasing; construction of new roads to serve the project site (through the Crown Valley, Ridgeview Village Unit 3, and/or Ridgeview Village Unit 9	yes	This study confirms that annual daily trips (ADT) is less than 4,000, on all local streets. Russell Ranch Boulevard is now Sophia Parkway. Sophia Parkway was constructed between Green Valley Road and East Natoma Street. Empire Ranch Road connects south to Iron

Mitigation Measure	Complete?	Notes/Comments
approved tentative maps); delay of tentative map approval; and/or reduction in the number of dwelling units.		Point Road at the location of the planned interchange.
4.5.1b: In order to minimize traffic impacts to existing residential roadways, the following general project and circulation phasing plan shall be implemented (see Circulation Phasing Plan following this table, which was included in the FEIR mitigation discussion).		
Phase 1: Development of Village 6 with roadway access to Gillett Drive, Powers Drive and Beatty Drive and construction of the Community Collector between Villages 5, 6 & 7.	Yes	Connections to Gillet Drive, Powers Drive, and Beatty Drive were constructed. The Community Collector was constructed between Villages 6 and 7 and the Village Center Collector was used to connect to Village 5.
Phase 2: Development of Village 1 with the construction of northern portion of Russell Ranch Boulevard* from the Community Collector to Green Valley Road.	Yes	*Russell Ranch Boulevard is now named Sophia Parkway.
Phase 3: Development of Village 2 and 3 with the construction of a portion of the Community Collector north of Village 3.	Yes	The Community Collector north of Village 3 was constructed as Elmores Way.
Phase 4: Development of Village 5 with the construction of a portion of the Community Collector north of Village 5.	Yes	The Community Collector north of Village 5 was constructed as Suffolk Way.
Phase 5: Development of a portion of Village 7 and the Village Center with the construction of Russell Ranch Boulevard from the Village Center to the Community Collector.	Yes	Russell Ranch Boulevard is now named Sophia Parkway.
Phase 6: Development of the remaining portions of Village 7 and the Village Center with the construction of a portion of the Community Collector north of Village 7 and the Village Center Collector.	Yes	The Community Collector north of Village 7 consists of

Mitigation Measure	Complete?	Notes/Comments
		the northern portion of Beatty Drive.[3]
Phase 7: Development of Village 4 with the construction of a portion of the Community Collector west of Village 4.	Yes	The Community Collector west of Village 4 was constructed as Suffolk Way.
Phase 8: Development of Village 8 with the construction of accesses to Weststar Lane and the City of Folsom.	In process	Village 8 is currently being developed. Connection to Folsom is via Tucher Way. (TM 13 1513)
The above project and circulation phasing plan may be modified based on market and development constraints. However, no additional villages beyond Village 6 shall have access to existing residential roadways east of the project site (i.e. Suffolk Way, Gillett Drive, Powers Drive, Julie Ann Way, and Beatty Drive) until additional project accesses and roadways are developed.	Yes	Additional project accesses and roadways have been developed, including Sophia Parkway, Alexander Drive, Beatty Drive, Elmores Way, Tucher Way.
4.5.2a: Widen Green Valley Road from two lanes to four lanes from El Dorado Hills Boulevard to the El Dorado County line.	Yes	The specified improvements have been constructed.
4.5.3a: Implement Mitigation Measures 4.5.2a	Yes	The specified improvements have been constructed.
4.5.3b: The project applicant shall be responsible for their fair-share cost of the following improvements (at the Green Valley Road/Francisco Drive intersection):		Improvements made as required by prior project phases. The project's fair share contribution will be made through the Traffic Impact Mitigation (TIM) fee program.
• widen the northbound Francisco Drive approach to include dual left-turn lanes, one exclusive through lane, and one exclusive right-turn lane;	Yes	
• widen the westbound Green Valley Road approach to include dual one exclusive left-turn lane, two exclusive through lanes, and one exclusive right-turn lane;	Yes	
• widen the eastbound Green Valley Road approach to include dual left-turn lanes, two exclusive through lanes, and one exclusive right-turn lane; and	Yes	

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[3] The section of the Community Collector between Village 6 and Village 4 was not constructed. This would have connected Beatty Drive to Trevi Way and Suffolk Way.

Mitigation Measure	**Complete?**	**Notes/Comments**
• modify the existing traffic signal equipment as necessary to accommodate the intersection widening.	Yes	
4.5.4: Install a traffic signal at the El Dorado Hills Boulevard/Francisco Drive intersection. Since signalization of the intersection is included in the El Dorado Hills RIF, the project will be subject to the RIF concurrently with the issuance of building permits.	Applicant will be conditioned to pay TIM Fee	The "Road Impact Fee" (RIF) is now part of the Traffic Impact Mitigation (TIM) fee. Project applicant opted to pay TIM Fee, in lieu of installing the traffic signal.
4.5.5: During the review of tentative maps for each phase of the Promontory Specific Plan, a traffic study shall be performed to determine the amount of project traffic that will be added to the El Dorado Hills Boulevard/Wilson Boulevard intersection. When the intersection warrants signalization, as determined by the El Dorado County Department of Transportation, or if the intersection is projected to operate at LOD "D", "E", or "F", as a result of implementing a particular phase of the Promontory Specific Plan, then the tentative map for that phase shall not be approved unless the intersection is signalized.	Yes	El Dorado Hills Boulevard/Wilson Boulevard intersection has been signalized.
4.5.6: Install a traffic signal at the Latrobe Road/U.S. Highway 50 Eastbound Ramps intersection. Since signalization of the intersection is included in the El Dorado Hills RIF, the project will be subject to the RIF concurrently with the issuance of building permits	Yes	Latrobe Road/U.S. Highway 50 EB ramp intersection has been signalized.
4.5.7a: Implement Mitigation Measures 4.5.2a.	Yes	The specified improvements have been constructed.
4.5.7b: Install a traffic signal and turn lane improvements at the Green Valley Road/North-South Project Collector Road (Russell Ranch Boulevard Extension) intersection. The turn lane improvements shall include an exclusive westbound left-turn lane and an exclusive eastbound right-turn lane on Green Valley Road. In addition, the North-South Collector Road approach shall include a dual left-turn lane and an exclusive right-turn lane. The timing of these improvements will be predicated on the phasing of the project and the results of the traffic studies submitted with each tentative subdivision map.	Yes	The specified improvements have been constructed.
4.5.8: The project applicant shall be responsible for contributing their fair-share of the cost to reconstruct the El Dorado Hills Boulevard/Latrobe Road interchange with U.S. Highway 50. Since reconstruction of the interchange is included in the El Dorado Hills RIF (now part of the TIM Fee) and the County's State System Capacity and Interchange Traffic Impact Mitigation program, the project will be subject to the RIF and State System Capacity TIM Fee concurrently with the issuance of building permits.	Yes	The specified improvements have been constructed.

Mitigation Measure	Complete?	Notes/Comments
4.5.9: The project developer shall be responsible for their fair-share cost of bus turnouts and transit shelters located within the project site. Bus turnouts and transit shelters will be placed along the proposed Russell Ranch Boulevard, community and village center collectors, as well as the village center. The specific location of these facilities shall be determined jointly by the El Dorado County DOT and El Dorado Transit Authority. The project applicant's fair-share cost shall be determined by the El Dorado County DOT. Construction of these improvements should occur when transit service is extended to the project.	Yes	The fair-share cost of transit-related improvements are included in the TIM Fee which the applicant will be conditioned to pay.
4.5.11a: The project applicant shall construct a barrier to prevent private vehicle access to Mormon Island Drive, at the intersection with Green Valley Road. This barrier shall be passable by emergency vehicles only. The specific barrier design shall be determined by the El Dorado County DOT and El Dorado Hills Fire Department. or **4.5.11b:** As an alternative to 4.5.11a, the Green Valley Road/Mormon Island Drive intersection may be signalized to maintain a LOS "B" in the a.m. and LOS "C" in the p.m.	Yes	The Green Valley Road/Mormon Island Drive intersection has been signalized.
4.5.13: The project applicant shall install a traffic signal at the El Dorado Hills Boulevard/Olson Lane intersection and construct exclusive left- and right-turn lanes on the Olson Lane approach.	Yes	El Dorado Hills Boulevard/Olson Lane intersection has been signalized.
4.5.14: Implement Mitigation Measure 4.5.5.	Yes	See above
4.5.15: Implement Mitigation Measures 4.5.7a and 4.5.7b.	Yes	See above

1.3 Study Purpose

The purpose of this Traffic Impact Analysis is to identify potential impacts on peak-hour traffic conditions at key adjacent intersections that Promontory Village 7 has a nexus to, and to document compliance with mitigation measures identified in the Promontory Specific Plan EIR.

Environmental clearance for the project was addressed with the Specific Plan EIR adopted in 1997. This study focuses on required checks of local circulation and access issues as required of each project phase by the EIR and verification that mitigations implemented by prior phases of the Specific Plan continue to provide adequate capacity and level-of-service.

This study was scoped and performed in accordance with the El Dorado County Department of Transportation Traffic Impact Study Protocols and Procedures, and study specific guidance from County of El Dorado Community Development Agency staff.

2.0 PROJECT DESCRIPTION

The proposed project would consist of 131 single family homes on approximately 176 acres of the Promontory Specific Plan Village 7. A preliminary site plan is provided as **Figure 2**. Development would occur on three existing parcels: Assessor's Parcel Number 124-390-04-100, 124-390-06-100, and 124-390-08-100. Densities average approximately o.74 units per acre in Village 7 with an average lot size 1.34 acers. General Plan land use for these parcels is shown as "AP" or adopted plan, referring to the Promontory Specific Plan which is incorporated into the General Plan. Zoning for these parcels also references back to the Specific Plan. Because the land use and zoning are incorporated from the Specific Plan, the Targeted General Plan Amendment & Zoning Ordinance Update (TGPA-ZOU) does alter the designations for the project parcels.

2.1 Project Access

Project related vehicle trips are anticipated to access the project from both the north and south via Sophia Parkway, as well as access to the east via Beatty Drive, Julie Ann Way, Mossridge Way, Ridgeview Drive, Gillette Drive, and Olson Lane to El Dorado Hills Boulevard (See **Figure 1**).

2.2 General Plan for Cumulative Impact Analysis

Land use development and infrastructure projects that are consistent with the El Dorado County General Plan, are expected to rely on the General Plan cumulative traffic analysis, EIR, and Supplemental EIR conclusions. The General Plan EIR and the Traffic Impact Mitigation Fee Program Supplement to the El Dorado County General Plan EIR, analyzed residential and employment growth, and the traffic impacts associated with that growth using theoretical achievable development of the General Plan at the conclusion of the "planning horizon" used in the General Plan for 2025. The General Plan Policy TC-Xb and Implementation Measures TC-A and TC-B require major five year updates to the Capital Improvement Program (CIP) and Traffic Impact Mitigation (TIM) fee programs. These updates have established a new "planning horizon" of 2035. In addition, the Targeted General Plan Amendment Draft EIR also push the "planning horizon" to 2035. These existing analysis generally cover the cumulative traffic effects of consistent development projects.

The proposed project is part of an approved Specific Plan and Development Agreement that has been incorporated into the General Plan, and subsequent updates to the CIP and TIM Fee programs. A review of the project's consistency with the existing General Plan per the 2014 El Dorado County Traffic Impact Study Guidelines demonstrates that cumulative analysis is not required. Through year 2035, the proposed project incorporates less growth into effected model TAZs than the growth assumed in the General Plan TDM.

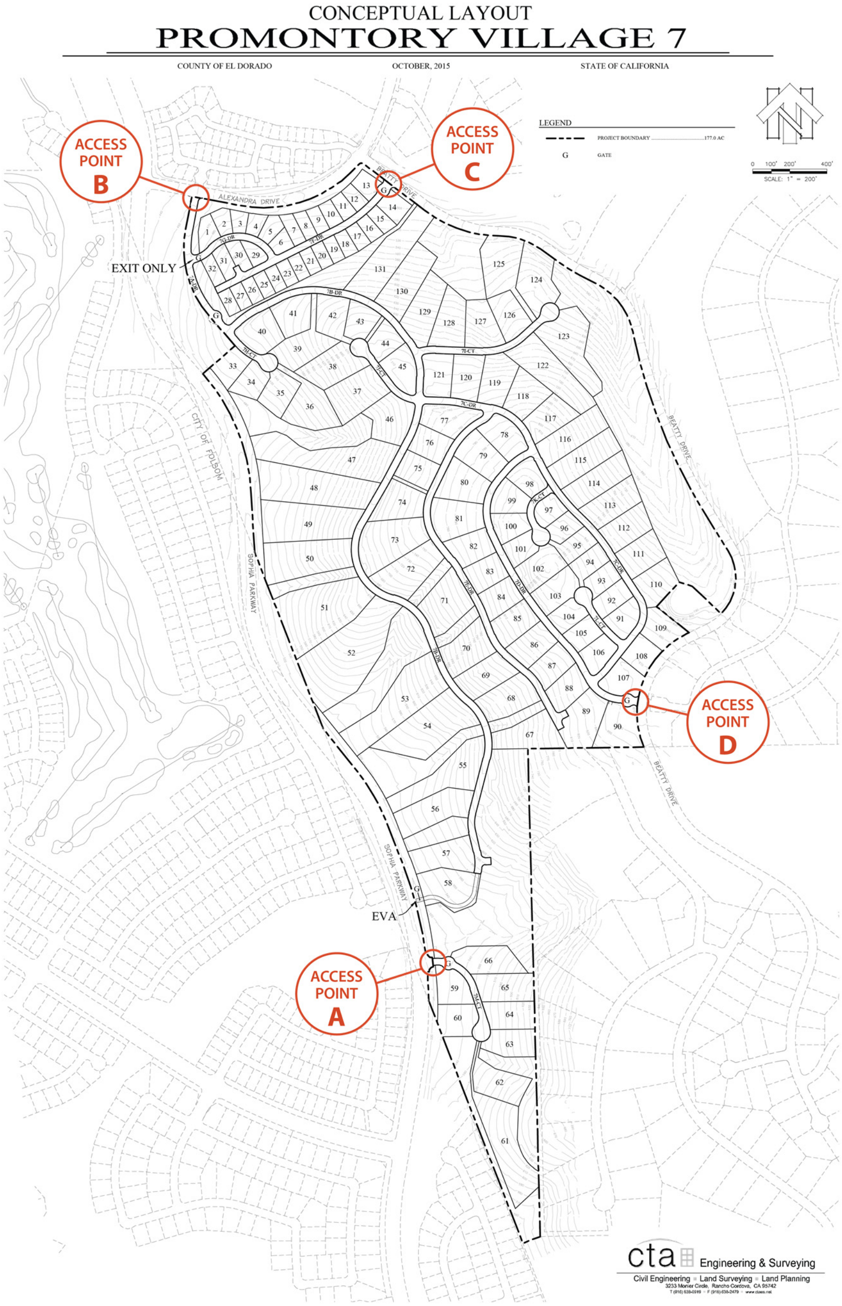

Figure 2. Preliminary site plan

The El Dorado County travel demand model (TDM) establishes the traffic levels analyzed for the horizon year in the General Plan, CIP and TIM Fee based on the projected land use. Consistency with the General Plan, CIP, and TIM Fee assumptions is demonstrated by comparing projected land use to the land use assumptions used to model the General Plan, CIP, and TIM Fee. Documenting that the addition of the project to the existing land use within effected model traffic analysis zone (TAZs) does not exceed the land use assumed in the model's cumulative year establishes that a project specific cumulative analysis is not warranted.

The project is located in TAZ #193 and #615 of the El Dorado County TDM[4]. This TAZ has assumed growth of 23 dwellings between 2010 and 2023 in the TDM.

- Between 2010 and 2035, the TDM assumed combined growth for TAZ 193 and TAZ 615 of 655 dwelling units.
- With the proposed project 405 units of that growth are used as follows:
    - 131 units in village 7 and Lot "C" (this study),
    - 106 units in Promontory Village 6 (155 units approved, 49 constructed through 2009),
    - 33 units from Promontory Village 5,
    - 64 units from Promontory Lot "H", and
    - 71 undeveloped lots in Ridgeview portion of TAZ 615,
- 250 dwelling units are available for growth resulting from future projects.

Promontory Village 8 is located in TAZ 616 and not discussed here, Village 8 has approved Tentative Maps.

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[4] Travel demand model version EDC-CAT_7525_090514.

3.0 STUDY AREA

The traffic study area (**Figure 3**), in El Dorado County, California, was selected in coordination with El Dorado County staff and with consideration of other recent studies within the area and the requirements to verify mitigation measures from the Promontory EIR. The study area includes portions of Sophia Parkway, Green Valley Road, Francisco Drive, El Dorado Hills Boulevard, Olson Way, Beatty Drive, Alexandra Drive, and local roads through the Ridgeview area connecting Beatty Drive with Olson Way. Study locations were selected in accordance with General Plan policies TC-Xd and TC-Xe. Specifically, the study was selected to include key El Dorado County locations where project traffic would constitute:

A. A two percent increase in traffic during the AM peak-hour, PM peak-hour, or daily, or
B. The addition of 100 or more daily trips, or
C. The addition of 10 or more trips during the AM peak-hour or the PM peak-hour.

3.1 Project Area Roadways

The following are descriptions of the primary roadways in the vicinity of the project.

- **Alexandra Drive** is a two-lane local road within the Promontory Specific Plan Area. Class II bike lanes are included in each direction.

- **Beatty Drive** is a north/south two-lane local road running from Alexandra Drive to in the Promontory, to its southern terminus within the Ridgeview Development. Class II bike lanes are included in each direction throughout the Promontory. South of Powers Drive, bike lanes are dropped.

- **El Dorado Hills Boulevard** is a north/south urban arterial roadway that extends from Green Valley Road on the north to US 50 on the south where it continues as Latrobe Road. North of Green Valley Road it continues as Salmon Falls Road. From Green Valley Road to Governor Drive it is a two lane urban arterial, between Governor Drive and Serrano Parkway a four-lane urban arterial, then a six lane urban arterial to US 50. Class II bike lanes are included in each direction. Additionally, Class I trials are provided on the eastern side of El dorado Hills Boulevard, south of Harvard Way, and the west side of El Dorado Boulevard, north of Stephen Harris Park (with a gap at Francisco Drive).

- **Francisco Drive** is a two-lane connector between Green Valley Road and El Dorado Hills Boulevard, especially for traffic traveling eastbound to southbound, and northbound to westbound, through this area. Class II bike lanes are included in each direction.

- **Gillette Drive** is a two lane local road that forms part of the connection between The Promontory and Ridgeview developments to El Dorado Hills Boulevard.

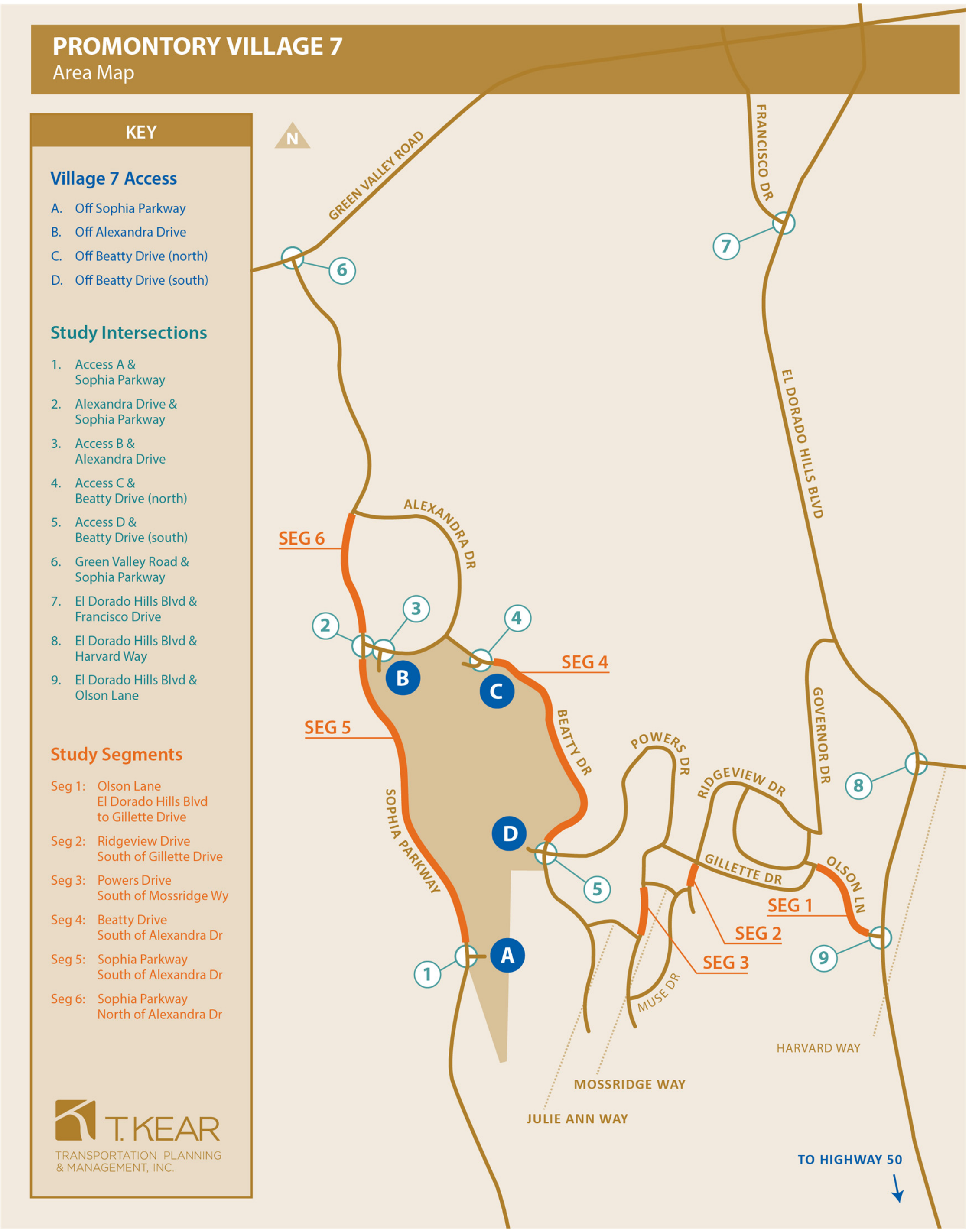

Figure 3. Study Area

- **Green Valley Road** is an east/west running two to four lane urban arterial connecting the City of Folsom through El Dorado Hills to Cameron Park and points east. It is a four lane facility from the El Dorado County line to Francisco Drive, and two lanes east Francisco Drive. Class II bike lanes are included in each direction west of Francisco Drive. East of Francisco, Green Valley Road includes fog striping reminiscent of a class II bike lane but it is not signed as such.

- **Julie Ann Way** is a two lane local road that forms part of the connection between The Promontory and Ridgeview developments to El Dorado Hills Boulevard.

- **Mooseridge Way** is a two lane local road that forms part of the connection between The Promontory and Ridgeview developments to El Dorado Hills Boulevard.

- **Olson Lane** is a two lane local road that forms part of the connection between The Promontory and Ridgeview developments to El Dorado Hills Boulevard.

- **Powers Drive** is a two lane local road that forms part of the connection between The Promontory and Ridgeview developments to El Dorado Hills Boulevard.

- **Ridgeview Drive** is a two lane local road that forms part of the connection between The Promontory and Ridgeview developments to El Dorado Hills Boulevard.

- **Sophia Parkway** is a two-lane north/south arterial connecting Green Valley Road and Empire Ranch Road. Access to US 50 at the Scott Road interchange in Folsom is provided through Iron Point Road from Empire Ranch Road. Sophia Parkway includes class II bike lanes in each direction. In older studies, this facility is named Russell Ranch Boulevard.

3.2 Transit Service

El Dorado Transit is the primary public transit service provider in El Dorado County and provides local transit services within and between community areas of the county including Placerville and Cameron Park. Near the study area, El Dorado Transit provides commuter service connecting a park-and-ride lot located at the intersection of Latrobe Road and White Rock Road with downtown Sacramento employment and several locations in Folsom including the Iron Point Light Rail Station, Ingersoll Way and Parker Drive, Intel, Kaiser Permanente, and Folsom Lake College. Dial-a-ride services are also provided within many portions of El Dorado County, including El Dorado Hills.

3.3 Bicycle Facilities

There are existing class II bike lanes along most of the major roadways in the vicinity of the project, including Alexandra Drive, Francisco Drive, Sophia Parkway, Beatty Drive north of Powers Drive, and Green Valley Road west of Francisco Drive. El Dorado Hills Boulevard includes class II bike lanes in each direction, as well as a class I trial on the eastern side of El dorado Hills Boulevard south of Harvard Way, and the West Side of El Dorado Boulevard north of Stephen Harris Park (with a gap at Francisco Drive).

The Promontory Specific Plan also accommodates completion of the planned east west class I trail within the utility easement that runs from Silva Valley Parkway through the Village Center to Sophia Parkway. Fees paid and improvements constructed by all phases of the Promontory Specific Plan have added build out of the bicycle facilities included in 2010 update to the El Dorado County Bicycle Transportation Plan.

3.4 Study Intersections and Segments

The following intersections are included in this evaluation and are marked in the preceding **Figure 3**:

1. Driveway A & Sophia Parkway
2. Alexandra Drive & Sophia Parkway
3. Driveway B & Alexandra Drive
4. Driveway C & Beatty Drive
5. Driveway D & Beatty Drive /Powers Drive
6. Green Valley Road & Sophia Pkwy
7. El Dorado Hills Boulevard & Francisco Drive
8. El Dorado Hills Boulevard & Olson Lane
9. El Dorado Hills Boulevard & Harvard Way

Arterial segment analysis was conducted for representative local roads that are anticipated to experience cut-through traffic between Promontory Village 7 and El Dorado Hills Boulevard. Segment analysis was also conducted for Sophia Parkway which will receive the majority of the trips generated by the project.

A. Olson Lane – El Dorado Hills Boulevard to Gillette Drive
B. Ridgeview Drive – south of Gillette Drive
C. Powers Drive – south of Mossridge Way
D. Betty Drive – south of Alexandra Drive
E. Sophia Parkway – south of Alexandra Drive
F. Sophia Parkway – north of Alexandra Drive

An internal circulation and on-site transportation review was also conducted. Internal circulation review focused on the adequacy of throat depths at gated entrances, and documenting the consistency of the proposed circulation system with El Dorado County standards and the design guidelines from the Promontory Specific Plan.

3.5 Study Scenarios

Four scenarios were identified for inclusion in this Traffic Impact Analysis through consultation with El Dorado County staff. The study determines the weekday AM peak-hour and PM peak-hour level-of-service at study intersections and on study segments under the following scenarios:

- Existing 2015 Condition,
- Existing 2015 Plus Proposed Project,
- Existing Plus Approved Projects 2025 (EPAP) (without project),
- EPAP 2025 Plus Proposed Project,

Existing 2015 and Existing 2015 Plus Proposed Project Scenario

The California Environmental Quality Act (CEQA) requires an analysis of the existing condition, which reflects the traffic volumes and roadway geometry at the time the study began. This scenario will be analyzed both with and without project traffic to identify any project related traffic impacts.

EPAP 2025 and EPAP 2025 Plus Proposed Project Scenario

These scenarios, with and without the project, will analyze conditions ten years from the current year calculated using a straight line interpolation from existing traffic levels to the General Plan's 2035 traffic projections. These scenarios will expressly include an interpolated level of traffic from all projects with development agreements and approved tentative maps. The Silva Valley Interchange is anticipated to be opened in 2016 and will therefore be accounted for in the EPAP 2025 and EPAP 2025 Plus Project scenarios.

4.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

This section provides a process overview, describes traffic forecasting, and discusses the methods/criteria used to evaluate level-of-service. A discussion of the significance criteria is included.

4.1 Process Overview

The overall analysis process was structured to identify potential adverse traffic effects related to the proposed project.

- Traffic volumes and turning movements for the Existing 2015 Conditions were determined from observed traffic counts.
- Study intersection and segment traffic operations were analyzed both with, and without, the proposed project to identify potential significant project impacts.
- Significance criteria were based on El Dorado County General Plan, Transportation and Circulation Element policies TC-Xa (Measure Y policies), TC-Xd and TC-Xe (level-of-service standards).

4.2 Traffic Forecasting Methodology

Future traffic volumes were based on the existing turning movement counts and segment counts combined with traffic growth from the El Dorado County Transportation Demand Model (TDM) catalog “EDC_CAT_75_25_090514”. Cumulative (2035) and Existing 2015 model volumes were used as the basis for interpolating growth forecasts for the EPAP 2025 scenarios as described below. The process utilized model runs reflecting both 2015 and 2035 traffic volumes, then straight line interpolation was applied to estimate incremental growth through 2025. The NCHRP 255 procedure[5] was used to refine forecasted turning movements.

Both the El Dorado County Transportation Demand Model, and the SACSIM (a similar model for the entire region that is maintained by the Sacramento Area Council of Governments) project that traffic volumes along Sophia Parkway will be lower in 2035 than they are today. To be conservative, Existing 2015 volumes were used as a “floor” for this study; meaning that where existing volumes were larger than forecast volumes from the model, the higher existing volumes were used in lieu of the model forecasts.

TDM Segment Level Calibration and 2015 Traffic Volumes:

The TDM was calibrated to local roadways by estimating and applying link level adjustment factors based on the difference between observed traffic counts and a 2015 TDM scenario. For the 2015 TDM scenario, the TDM model’s baseline (2010) land use was adjusted upward to reflect development between 2010 and 2015 in areas near the project:

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[5] Transportation Research Board (1982) National Cooperative Highway Research Program Report 255, Washington D.C.

- TAZ 171 (part of Carson Creek Specific Plan): Added 20 additional dwelling units (DUs).
- TAZ 203 (part of the El Dorado Hills Specific Plan): Added 50 additional DUs.

This 2015 land use was assigned to the 2010 default roadway network, with Windfield Way added, and a new centroid added to TAZ 193 to represent Olson Lane. Difference between observed traffic volumes and the model results were used as a calibration adjustment on all subsequent model runs.

2035 Traffic Forecasts and Interpolation of 2025 Link Volumes:

Growth in traffic for the EPAP 2025 scenario was based on linear interpolation of segment volumes between the Existing 2015 scenario, and a cumulative (2035) TDM scenario. 2035 land use was checked to insure that it reflected a reasonable degree of buildout of the nearby specific plan areas and to insure that interpolation of that land use would account for all approved tentative maps in the El Dorado Hills area.

Carson Creek Specific Plan

- TAZ 171 (part of Carson Creek Specific Plan): Added 20 additional DUs.
- TAZ 611 (part of Carson Creek Specific Plan): Added 324 additional DUs.

Valley View Specific Plan

- TAZ 167 (Valley View Specific Plan, Blackstone): Added 375 DUs.
- TAZ 626 (new TAZ for Valley View Specific Plan, East Ridge): Added 339 DU and shifted 362 DUs from TAZ 180 for a total of 701 DUs.
- TAZ 180: Shifted 362 DUs to TAZ 626, leaving 457 in the balance of TAZ 180.

El Dorado Hills (Serrano) Specific Plan

- TAZ 203 (part of the El Dorado Hills Specific Plan): Added 218 additional DUs.
- TAZ 169 (Town Center) removed 114 retail employees and added 250 high density DUs to account for the approved Town Center Apartments project (4.565 ac * 24.96 emp/ac = 114 emp).

Promontory Specific Plan

- TAZ 193 (Promontory): Reduced land use by 113 DUs reflecting the portion of the 131 DUs from Promontory Village 7 and “Lot C” that are assumed to be within TAZ 193.
- TAZ 615 (Promontory): Reduced land use by 18 DUs, reflecting the portion of the 131 DUs from Promontory Village 7 that are assumed to be within TAZ 615.

Other

- TAZ 164 employment was split into TAZ 164 and new TAZ 627 based on acreage, resulting in 614 office jobs were being allocated to TAZ 627. (Related to a nearby study.)
- TAZ 212: Added 525 DUs.

Corresponding changes were made where appropriate to the distribution of households within each TAZ by socioeconomic characteristics. The 2035 model road network was also modified so that it would be appropriate to use the results to interpolate to EPAP 2025 conditions.

- Added connection for Windfield Way (nodes 2028 ↔ 3123), and removed Centroid connector from TAZ 610 to node 2028. This edit allows the model to reflect traffic to/from the business parks west of Latrobe Road that directly access White Rock Road. (This was also done for the 2015 network.)
- Added new centroid connector from TAZ 193 to node 2199, representing Olson Way. (This was also done for the 2015 network.)
- Split TAZ 180 into TAZ 180 and TAZ 626. The new TAZ 626 represents the Valley View Specific Plan East Ridge Village development, and is connected to the Valley View Parkway at node 2045.
- Confirmed that US-50 HOV lanes did not extend east of Cameron Park Drive (in both directions).
- Removed Country Club extension (Bass Lake to Silva Valley).
- Confirmed Reduction of Serrano Parkway from 4 to 2 lanes between Bass Lake and Villagio.
- Added a new node (#15925) on Golden Foothill Parkway between nodes #3127 and #3125 and rerouted Carson Crossing Drive through the new node and connected TAZ 611 through the new node. (related to a nearby study).
- Split the 250 acre TAZ 164 into a 195 acre TAZ 164 and 55 acre TAZ 627. The new TAZ 627 represents parcels 117-210-28, 117-210-30, and 117-210-33 and loads via the northerly extension of Carson Crossing Drive at node #15925. (related to a nearby study).
- Removed the Empire Ranch interchange (necessary for interpolation to 2025 conditions).

Vehicle trips from the existing condition (2015) land use and cumulative condition (2035) TDM land use were there receptive networks, and the segment level calibration factors were applied to both the 2015 and the 2035 link volumes. As discussed above, for any intersections where an approach or departure volume in 2035 was lower than the observed 2015 counts, the 2015 data was used as a floor to eliminate any “negative growth”. Link level volume estimates for the EPAP (2025) Scenario were estimated through linear interpolation. Volume plots from the loaded TDM networks are provided in **Appendix E**.

4.3 Intersection Turn Movement Forecast Methodology

Directional link level volume estimates from the Baseline 2015 and EPAP 2025 TDM model forecasts were used to scale traffic counts using the NCHRP 255 methodology. The methodology was applied through the TurnsW32 v2.0 software[6]. The Furness reports for the AM and PM peak-hour turn movement forecasts under EPAP 2025 conditions are provided in **Appendix D**.

Additionally, the 2015 observed counts, by movement, were used as a floor for EPAP 2025 volumes. Using these volumes as a floor ensures a conservative set of volume forecasts for use in the Traffic Impact Analysis.

4.4 Level-of-Service Methodology

Level-of-service (LOS) is a qualitative indication of the level of delay and congestion experienced by motorists using an intersection. Levels-of-service are designated by the letters A through F, with A being the best conditions and F being the worst (high delay and congestion). Calculation methodologies, measures of performance, and thresholds for each letter grade differ for road segments, signalized intersections, and unsignalized intersections.

Based on guidance from El Dorado County Community Development Agency staff, and the *County of El Dorado Department of Transportation – Traffic Impact Study Protocols and Procedures* (Dated November 2914), the following procedures described below for intersection traffic operations analysis were selected for this study.

Intersection Traffic Operations Analysis

Signalized Intersections

The methodology from HCM 2010[7] Chapter 18, are used to analyze signalized intersections. Level-of-service can be characterized for the entire intersection, each approach, or by lane group. Control delay alone (the weighted average delay for all vehicles entering the intersection) is used to characterize level-of-service for the entire intersection or an approach. Control delay and volume to capacity ratio are used to characterize level-of-service for lane groups. The average delay criteria used to determine the level-of-service at signalized intersections is presented in **Table 2**.

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[6] Dowling Associates (2002), http://sites.kittelson.com/kittelsondownloads/Downloads/Download/12544.

[7] Transportation Research Board (2010) Highway Capacity Manual, Washington, D.C.

Table 2. Level-of-Service Criteria for Signalized Intersections

Level -of- Service	Description	Average Delay[1] (Sec. /Vehicle.)
A	Very Low Delay: This level-of-service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.	$\leq$ 10.0
B	Minimal Delays: This level-of-service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.	10.1-20.0
C	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (*to service all waiting vehicles*) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	20.1-35.0
D	Approaching Unstable/Tolerable Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.1-55.0
E	Unstable Operation/Significant Delays: This is considered by many agencies the upper limit of acceptable delays. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	55.1-80.0
F	Excessive Delays: This level, considered to be unacceptable to most drivers, often occurs with oversaturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delay levels.	> 80.0 or v/c >1.0

Note 1: Weighted average of delay on all approaches. This is the measure used by the Highway Capacity Manual to determine level-of-service. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

Source: Transportation Research Board (2010) Highway Capacity Manual, Washington D.C., Chapter 18; and Transportation Research Board (2000) Highway Capacity Manual, Washington D.C., Chapter 16

Unsignalized Intersections

The methodology from HCM 2010 is used for the analysis of unsignalized intersections. At an unsignalized intersection, most of the main street traffic is undelayed, and by definition have acceptable conditions. The main street left-turn movements and the minor street movements are all susceptible to delay of varying degrees. Generally, the higher the main street traffic volumes, the higher the delay for the minor movements. Separate methods are utilized for Two-Way Stop-Controlled (TWSC) intersections, and All-Way Stop-Controlled (AWSC) intersections.

- **TWSC**: The methodology for analysis of two-way stop-controlled intersections calculates an average total delay per vehicle for each minor street movement and for the major street left-turn movements, based on the availability of adequate gaps in the main street through traffic. A level-of-service designation is assigned to individual movements or to combinations of movements (in the case of shared lanes) based upon delay, it is not defined for the intersection as a whole. Unsignalized intersection level-of-service reported herein is for each movement (or group of movements) based upon the respective average delay per vehicle. **Table 3** presents the average delay criteria used to determine the level-of-service at TWSC and at AWSC intersections.
- **AWSC:** At all-way stop-controlled intersections, the level-of-service is determined by the weighted average delay for all vehicles entering the intersection. The methodologies for these types of intersections calculate a single weighted average delay and level-of-service for the intersection as a whole. The average delay criteria used to determine the level-of-service at all-way stop intersections is the same as that presented in **Table 3**. Level-of-service for specific movements can also be determined based on the TWSC methodology.

It is not unusual for some of the minor street movements at unsignalized intersections to have level-of-service D, E, or F conditions while the major street movements have level-of-service A, B, or C conditions. In such a case, the minor street traffic experiences delays that can be substantial for individual minor street vehicles, but the majority of vehicles using the intersection have very little delay. Usually in such cases, the minor street traffic volumes are relatively low. If the minor street volume is large enough, improvements to reduce the minor street delay may be justified, such as channelization, widening, or signalization.

Table 3. Level-of-Service Criteria for Unsignalized Intersections

Level of Service (LOS)	Description	TWSC[1] Average Delay by Movement (seconds / vehicle)	AWSC[2] Intersection Wide Average Delay (seconds / vehicle)
A	Little or no delay	< 10	< 10
B	Short traffic delay	> 10 and < 15	> 10 and < 15
C	Average traffic delays	> 15 and < 25	> 15 and < 25
D	Long traffic delays	> 25 and < 35	> 25 and < 35
E	Very long traffic delays	> 35 and < 50	> 35 and < 50
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50 (or, v/c >1.0)	> 50

Note 1: Two-Way Stop-Control (TWSC) level-of-service is calculated separately for each minor street movement (or shared movement) as well as major street left turns using these criteria. Any movement with a volume to capacity ratio (v/c) greater than 1.0 is considered to be level-of-service F.

Note 2: All-Way Stop-Control (AWSC) assessment of level-of-service at the approach and intersection levels is based solely on control delay.

Source: Transportation Research Board (2010) Highway Capacity Manual, Washington D.C., Chapter 19 (TWSC) and Chapter 20 (AWSC).

Signal Warrants

At each unsignalized intersection, the potential need for a traffic signal was evaluated. Traffic signal warrants are a series of standards that provide guidelines for determining if a traffic signal is appropriate. Signal warrant analyses are typically conducted at intersections of uncontrolled major streets and stop sign-controlled minor streets. If one or more signal warrants are met, signalization of the intersection may be appropriate. However, a signal should not be installed if none of the warrants are met, since the installation of signals would increase delays on the previously uncontrolled major street, and may increase the occurrence of particular types of accidents.

As stated in the 2012 California Edition of the Manual on Uniform Traffic Control Devices (MUTCD)[8], *"An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.*

The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:

- *Warrant 1, Eight-Hour Vehicular Volume*
- *Warrant 2, Four-Hour Vehicular Volume*
- *Warrant 3, Peak-hour*
- *Warrant 4, Pedestrian Volume*
- *Warrant 5, School Crossing*
- *Warrant 6, Coordinated Signal System*
- *Warrant 7, Crash Experience*
- *Warrant 8, Roadway Network*
- *Warrant 9, Intersection Near a Grade Crossing*

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal."

Consistent with the industry standard of practice, this Traffic Impact Analysis did not evaluate the full panoply of warrants for traffic signals, but instead focused on the peak-hour warrant. The MUTCD states that, "*This [peak-hour] signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.*" So the peak-hour warrant is being used in this impact analysis study as an "indicator" of the likelihood of an

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[8] Caltrans (2012) California Manual on Uniform Traffic Control Devices - FHWA's MUTCD 2009 Edition as amended for use in California, Section 4C.

unsignalized intersection warranting a traffic signal in the future. Intersections that exceed the peak-hour warrant are considered (for the purposes of this impact analysis) to be likely to meet one or more of the other signal warrants (such as the 4-hour or 8-hour warrants). This peak-hour analysis is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction.

Unsignalized intersections were evaluated using the Peak-hour Volume Warrant (Warrant No. 3) in the California MUTCD 2012. The Peak-hour Volume Warrant was applied where the minor street experiences long delays in entering or crossing the major street for at least one hour in a day.

Even if the Peak-hour Volume Warrant is met, a more detailed signal warrant study is recommended before a signal is installed. The more detailed study should consider volumes during the daily peak-hours of roadway traffic, pedestrian traffic, and accident histories.

El Dorado County Roadway Segments

Several methods are available to evaluate roadway segments. The methodology select for this analysis was chosen to be consistent with the Promontory Specific Plan EIR, and the 2010 highway capacity manual, L level-of-service criteria are shown in **Table 4**.

Table 4. Level-of-Service Criteria for County Roadway Segments

Roadway Classification	LOS A	LOS B	LOS C	LOS D	LOS E
2-Lane Undivided Roadway	2,180	5,050	8,650	14,630	24,380
4-Lane Undivided Roadway	15,000	17,500	20,000	22,500	25,000
4-Lane Divided Roadway	22,500	26,250	30,000	33,750	37,500
6-Lane Divided Roadway	33,750	39,380	45,000	50,630	56,250

4.5 Standards of Significance

Level-of-service impacts of the proposed project were determined based on the methods described above and identified as either "significant" or "less-than-significant" in accordance with El Dorado County protocols and procedures[9] .

General Plan Circulation Policy TC-Xd provides that level-of-service for county-maintained roads and state highways within the unincorporated areas of the county shall not be worse than level-of-service E in the community regions or level-of-service D in the rural centers and rural regions, unless specifically exempted as shown in **Table 5**.

Table 5. General Plan Exceptions to Level-of-Service Standards[10]

El Dorado County Roads Allowed to Operate at Level-of-Service F[a] (Through December 31, 2018)	
Road Segments	**Max. v/c[b]**

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[9] Traffic Impact Study Protocols and Procedures, County of El Dorado, Department of Transportation, 2014

[10] 2004 General Plan (Amended January 2009) Table TC-2

Cambridge Road	Country Club Drive to Oxford Road	1.07
Cameron Park Drive	Robin Lane to Coach Lane	1.11
Missouri Flat Road	US 50 to Mother Lode Drive	1.12
	Mother Lode Drive to China Garden Road	1.20
Pleasant Valley Road	El Dorado Road to State Route 49	1.28
US 50	Canal Street to junction of State Route 49 (Spring Street)	1.25
	Junction of State Route 49 (Spring Street) to Coloma Street	1.59
	Coloma Street to Bedford Avenue	1.61
	Bedford Avenue to beginning of freeway	1.73
	Beginning of freeway to Washington overhead	1.16
	Ice House Road to Echo Lake	1.16
State Route 49	Pacific/Sacramento Street to new four-lane section	1.31
	US 50 to State Route 193	1.32
	State Route 193 to county line	1.51

Note a: Roads improved to their maximum width given right-of-way and physical limitations
Note b: Volume-to-Capacity ratio.

The study intersections and segments are all within the El Dorado Hills community region and shall operate at level-of-service E or better. If a project causes the peak-hour level-of-service or volume/capacity ratio on a county road or state highway that would otherwise meet the county standards (without the project) to exceed the values listed in the above tables and text, then the impact shall be considered significant. Because this Traffic Impact Analysis is not a CEQA document, facilities and intersections will be noted as having deficient level-of-service rather than an impact.

If any county road or state highway fails to meet the above listed county standards for peak-hour level-of-service or volume/capacity ratios under existing conditions, and the project will "significantly worsen" conditions on the road or highway, then the impact shall be considered significant. The term, "significantly worsen" is defined for the purpose of this paragraph according to General Plan Policy TC-Xe as follows:

A. A two percent increase in traffic during the AM peak-hour, PM peak-hour, or daily, or

B. The addition of 100 or more daily trips, or

C. The addition of 10 or more trips during the AM peak-hour or the PM peak-hour.

4.6 Analysis Tools

El Dorado County Travel Demand Model (TDM)

As noted in prior sections, The El Dorado County Travel Demand Model (version EDC_CAT_7525_090514) was utilized to forecast growth in traffic volumes on study area roadways. The TDM includes a 2010 baseline year and a 2035 cumulative year. Modifications to the TDM land use and roadway networks were discussed in Section 4.2.

Macroscopic Intersection Analysis

Control delay and level-of-service for study intersections were calculated using Synchro analysis software (Version 9). Synchro is a complete software package for modeling and optimizing traffic signal timings, and Version 9.0 implements the methodologies of the 2000 and 2010 HCM for signalized and unsignalized intersections. Synchro requires data on road characteristics (geometric), traffic counts, and the signal timing data for each analysis intersection. In general, Synchro's default parameters were used, except for locations where specific field data were available (e.g., peak-hour factors).

5.0 EXISTING 2015 CONDITIONS

5.1 Data Sources

The analysis tools require a variety of data to generate the evaluation criteria. The following sections describe data collection procedures for Existing 2015 Conditions. There were three primary data elements (roadway characteristics, intersection turning movement counts, and traffic control data); and two supplementary elements (other recent studies, and field data) that comprised the data collection program for this traffic analysis.

Roadway Geometry and Usage Characteristics

The geometry and usage data for the analysis were collected through the use of aerial photographs, field visits, and prior studies. Current intersection geometry was field validated. **Table 6** shows the key items included in the geometric data and the source for each item.

Table 6. Key Items and Sources for Geometry and Usage Data

Key Item	Source
Lane configurations & width	Aerial photographs and field visits
Lane utilization	Prior studies, aerial photographs, and field visits
Intersection spacing	Aerial photographs and field visits
Length of storage bays	Aerial photographs and field visits
Transit stops and routes	Transit schedules, aerial photographs, and field visits
Turn prohibitions or allowance	Aerial photographs and field visits

Lane configurations and width – These data specify the number of lanes and the width of the roadway in each direction, and the directional turns that are allowed from each lane.

Lane utilization – These data specify how lanes are used by drivers, such as traffic distribution between lanes on a multi-lane roadway.

Intersection spacing – These data refer to the distance between intersections, which is recorded in feet.

Length of storage bays – These data refer to the length (feet) of available storage for left- or right-turning vehicles where exclusive turn lanes are available. These data are collected for right-turn lanes when the parking lane is used as a right- turn lane.

Transit stops and routes – A transit stop is an area where passengers await, board, alight, and transfer between transit vehicles. A transit route is the roadway that transit vehicles operate on.

Turn prohibitions or allowance – This data specify if right turns on red (RTOR) are allowed on the roadway.

Intersection Turning Movement Counts

Existing morning and evening peak-period vehicle and pedestrian turning movement counts were collected at study intersections in Late August 2015, March 2015, and June 2014. El Dorado

County provided January 2013 counts for two study intersections, Olson Lane/El Dorado Hills Boulevard and Harvard Way/El Dorado Hills Boulevard. The 2013 traffic counts were used as is because over the last five years traffic counts have been flat to declining along this stretch of El dorado Hills boulevard[11].

New counts performed for this study were collected in 15-minute (or smaller) intervals on a Tuesday, Wednesday, or Thursday when schools were in session. Traffic count data sheets are provided in **Appendix A** of this report. Peak-hour traffic counts were used to conduct the intersection level-of-service analysis. Turning movement counts at consecutive intersections were balanced and adjusted to better reflect existing traffic flows. Observed intersection peak-hour factors (PHF) for the peak-hour were applied. **Figure 4** provides a summary of the intersection lane geometry and peak period turning movements under Existing 2015 Conditions.

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[11] El Dorado County Community Development Agency Transportation Division Five Year Traffic Summary 2010-2014

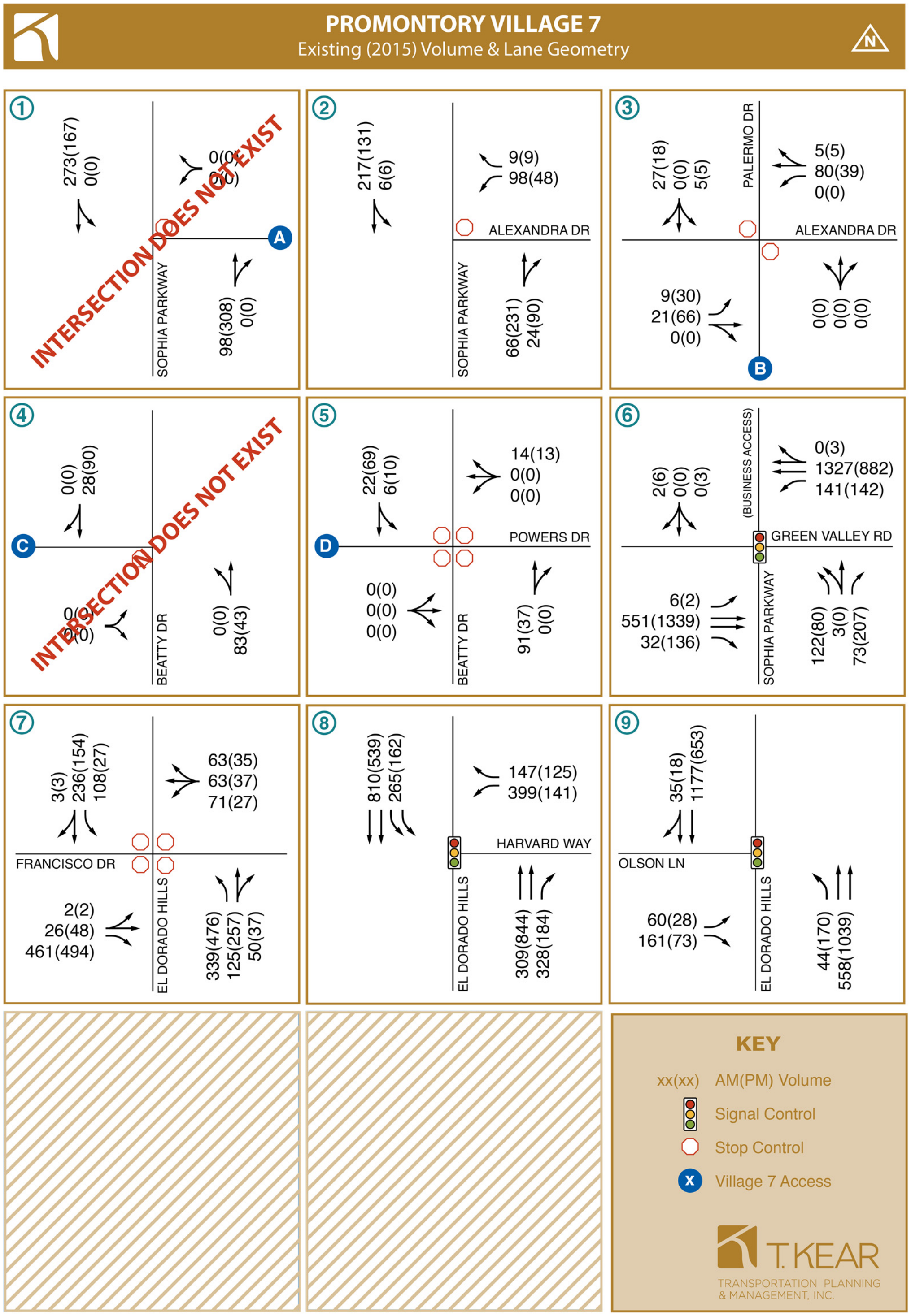

Figure 4. Existing 2015 Conditions Lane Geometry and Turn Movements

5.2 Existing 2015 Condition Intersection and Segment Level-of-Service

Table 7 through **Table 9** presents a summary of level-of-service and queueing results for the study intersections and segments under Existing 2015 Conditions. The results indicate that all study intersections, and all study segments, operate at level-of-service E or better. Queuing at intersection #8 (El Dorado Hills Boulevard/Harvard Way) for the northbound right turn exceeds the length of the right turn flair on El Dorado Hills Boulevard. Since the right turn is a shared movement with the northbound through phase of the signal, this does not create an operational problem. Peak 15 minute volumes for some movements at intersection #6 (Green Valley Road/Sophia Parkway) exceeded the calculated capacity, and queues may exceed those listed in **Table 9**, however where queue storage is limited by the length of a turn pocket, the pockets are longer than the anticipated queue lengths. Calculation sheets for intersection delay and level-of-service are provided in **Appendix B**.

Table 7. Existing 2015 Intersection Delay and Level-of-Service

Study Intersection	Control	Existing 2015 No Project. AM	Existing 2015 No Project. PM
#1 Driveway A & Sophia Pkwy	TWSC¹	n/a	n/a
#2 Alexandra Dr & Sophia Pkwy	TWSC¹	11.8 B (WBL)	12.2 B (WBL)
#3 Driveway B & Alexandra Dr	TWSC¹	9.1 A (SB)	9.0 A (SB)
#4 Driveway C & Beatty Dr	TWSC¹	n/a	n/a
#5 Driveway D & Beatty Dr/Powers Dr	AWSC	7.6 A	7.3/ A
#6 Green Valley Rd & Sophia Pkwy	Signal	14.3 B	24.7 C
#7 El Dorado Hills Blvd & Francisco Dr	AWSC	21.2 C	26.6 D
#8 El Dorado Hills Blvd & Harvard Wy	Signal	11.7 A	7.6 A
#9 El Dorado Hills Blvd & Olson Ln	Signal	27.0 C	12.7 B

(1) For TWSC intersections, level-of-service is determined for each minor-street movement (or shared movement) as well as major-street left turns. Results are reported for the worst movement (or shared movement), and the worst movement (or shared movement) is reported in parentheses.

Table 8. Existing 2015 Segment Level-of-Service

Study Segment	Segment Type	No Project ADT & LOS	ADT ≤ 4K (Mitigation 4.5.1a)
A. Olson Ln – El Dorado Hills Blvd to Gillette Dr	2-lane undivided	2,963 B	OK
B. Ridgeview Dr – south of Gillette Dr		1,535 A	OK
C. Powers Dr – south of Mossridge Wy		727 A	OK
D. Betty Dr – south of Alexandra Dr		1,485 A	OK
E. Sophia Pkwy – south of Alexandra Dr		5,018 B	n/a
F. Sophia Pkwy – north of Alexandra Dr		4,061 B	n/a

Table 9. Existing 2015 95% queue length and available storage lengths without project

Study Intersection (Control Type)	Approach	Storage (feet)	No Proj. AM (Feet)	No Proj. PM (Feet)
#1 Driveway A & Sophia Pkwy (TWSC)	WB shared	n/a	0	0
	SB left	n/a	0	0
#2 Alexandra Dr & Sophia Pkwy (TWSC)	WB left	110	18	8
	WB right	n/a	0	0
	SB shared	n/a	0	0
#3 Driveway B & Alexandra Dr (TWSC)	NB shared	n/a	0	0
	EB left	50	0	0.3
	WB left	60	0	0
	SB shared	n/a	3	0.3
#4 Driveway C & Beatty Dr (TWSC)	NB shared	n/a	0	0
	EB shared	n/a	0	0
#5 Driveway D & Beatty Dr/Powers Dr (AWSC)	NB shared	n/a	13	3
	EB shared	n/a	0	0
	WB shared	n/a	0	3
	SB shared	n/a	3	8
#6 Green Valley Rd & Sophia Pkwy (Signal)	EB left	220	16	9
	EB through	n/a	192	#651
	EB right	220	0	44
	WB left	230	#158	#181
	WB shared	n/a	#593	295
	NB shared	200	62	49
	NB right	200	9	55
	SB shared	n/a	0	0
#7 El Dorado Hills Blvd & Francisco D (AWSC)	NB left	600	173	293
	NB shared	n/a	40	75
	EB shared	190	5	10
	WB shared	n/a	98	30
	SB left	100	33	8
	SB shared	n/a	105	75
#8 El Dorado Hills Blvd & Harvard Dr (Signal)	EB left	90	55	35
	EB right	n/a	25	31
	NB left	250	59	172
	NB through	n/a	112	255
	SB shared	n/a	#517	255
#9 El Dorado Hills Blvd & Olson Ln (Signal)	WB left	n/a	308	122
	WB right	n/a	19	38
	NB through	n/a	111	243
	NB right	30	**119**	91
	SB left	200	118	70
	SB through	n/a	201	81

95% volume exceeds capacity, queue may be longer.

6.0 PROJECT TRIPS

6.1 Proposed Project Trip Generation

Trip generation relates land uses to the number of persons or vehicles entering or exiting the site. The number of trips anticipated to be generated by the proposed project were derived using data included in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th edition (2012), and is provided in **Table 10** below. The ITE methodology estimates both the highest project trip generation rate ("peak-hour of generator"), and the trip generation rate expected during the peak-hours for traffic volume on adjacent streets ("peak-hour of adjacent street"). The higher peak-hour of generator rates were utilized in this Traffic Impact Analysis. ITE trip generation rates are a function the development size, reflecting the tendency for larger developments to internalize more trips. The El Dorado County staff practice is to use the higher of the average trip generation rates and the formula-based rates. In this case the formula-based rates (based on a 131 unit development) were higher (and therefore more conservative) than the average rates and as such were used for this analysis.

Table 10. Project Trip Generation for 131 Dwelling Units in Promontory Village 7

Description	**ITE Land Use**	**Units**	**Daily**	**AM Peak-hour of Generator**					**PM Peak-hour of Generator**				
			Total Trips	Total Trips	In		Out		Total Trips	In		Out	
					%	Trips	%	Trips		%	Trips	%	Trips
Housing	210	131	1346	104	26%	27	74%	77	136	64%	87	36%	49

Housing -- ln(T)=0.92*ln(X)+2.72, AM: ln(T)=0.92*ln(X)+2.72, PM: ln(T)=0.88*ln(X)+0.62

Source: Trip Generation 9th Ed., 2012, ITE , land use 210 (Single-Family Detached Housing)

6.2 Proposed Project Trip Distribution

The distribution of project trips was based on results of select zone analysis from the TDM, trip distribution assumptions from previous traffic impact studies in the vicinity (including previous studies for this group of projects), discussion with the project team, input from County staff, and local area knowledge. A trip distribution figure is provided as **Figure 5**.

6.3 Proposed Project Trip Assignment

Project trips, derived from the trip generation and distribution shown above, were assigned to study intersections as shown in **Figure 6**. Generally trips were assigned to the project access point in nearest project access point that they might have access to and which was in the direction that they were going or coming from.

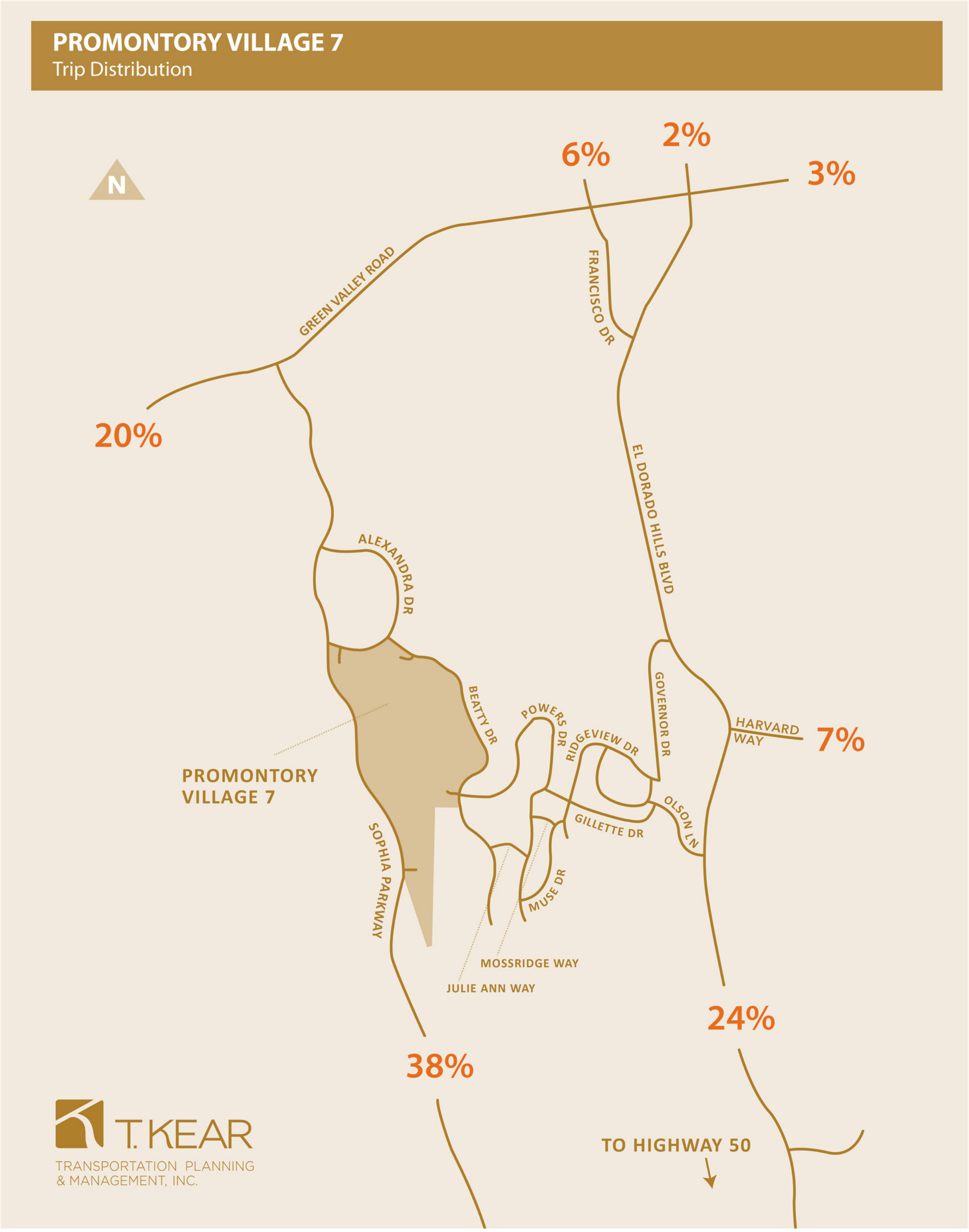

Figure 5. Project Trip Distribution

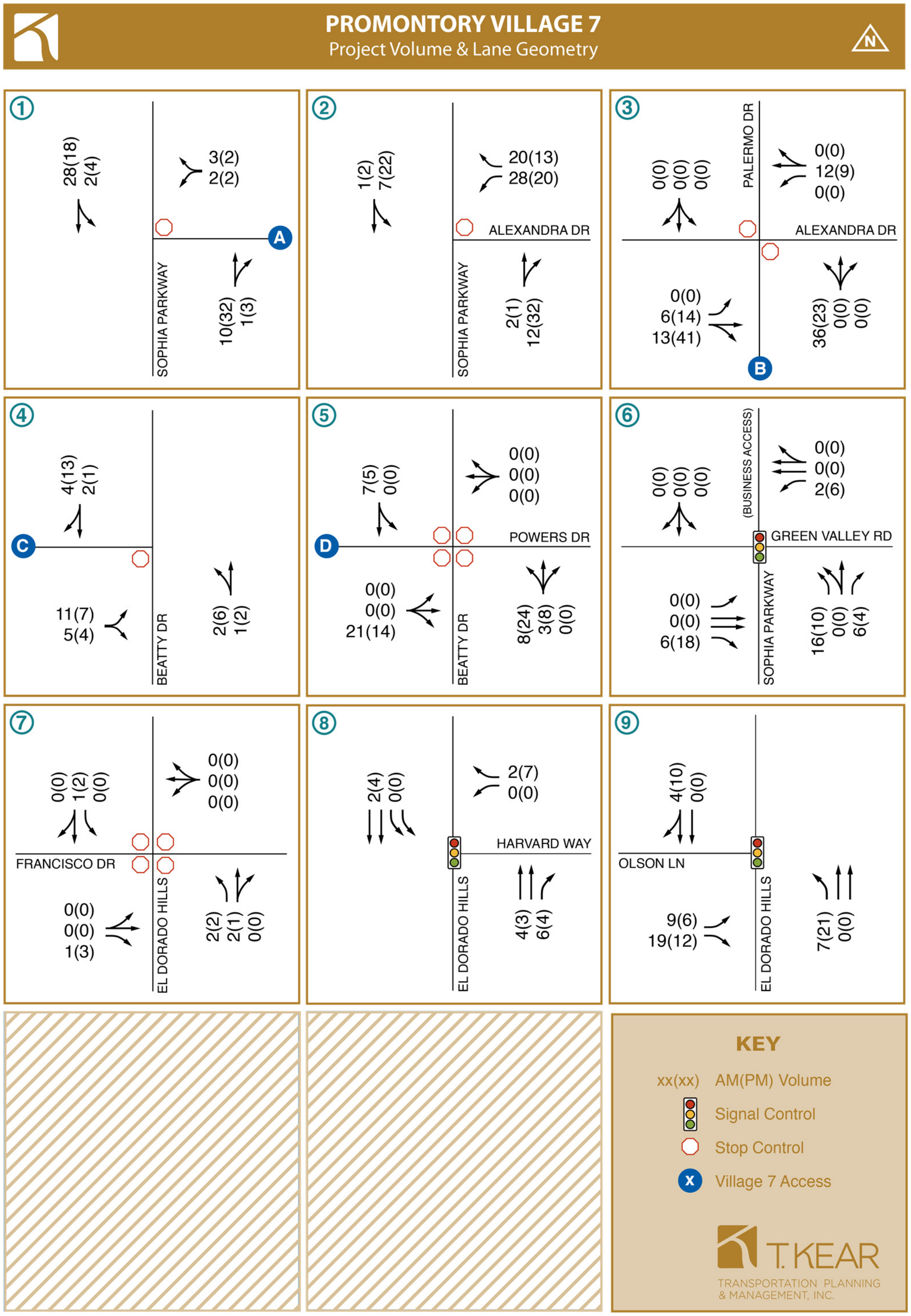

Figure 6. Promontory Village 7 Project Trip Assignment

7.0 EXISTING 2015 PLUS PROPOSED PROJECT CONDITIONS

Peak-hour traffic associated with the proposed project was added to the Existing 2015 Conditions scenario traffic volumes, delay and level-of-service were determined at the study intersections and segments. **Figure 7** summarizes the turning movements and lane configurations for the Existing 2015 Plus Proposed Project scenario.

Table 11 through **Table 13** presents a summary of the level-of-service and queueing results for the study intersections and segments under Existing 2015 Plus Project Conditions. The results mirror those from the Existing 2015 condition. All study intersections, and all study segments, are anticipated to operate at level-of-service E or better. Queuing at intersection #8 (El Dorado Hills Boulevard/Harvard Way) for the northbound right turn exceeds the length of the right turn flair on El Dorado Hills Boulevard. Since the right turn is a shared movement with the northbound through phase of the signal, this does not create an operational problem. Peak 15 minute capacities for some movements at intersection #6 (Green Valley Road/Sophia Parkway) are exceeded and actual queues may exceed those listed in **Table 13**, however where queue storage is limited by the length of a turn pocket, the pockets are longer than the anticipated queue lengths. Calculation sheets for intersection delay and level-of-service are provided in **Appendix B**.

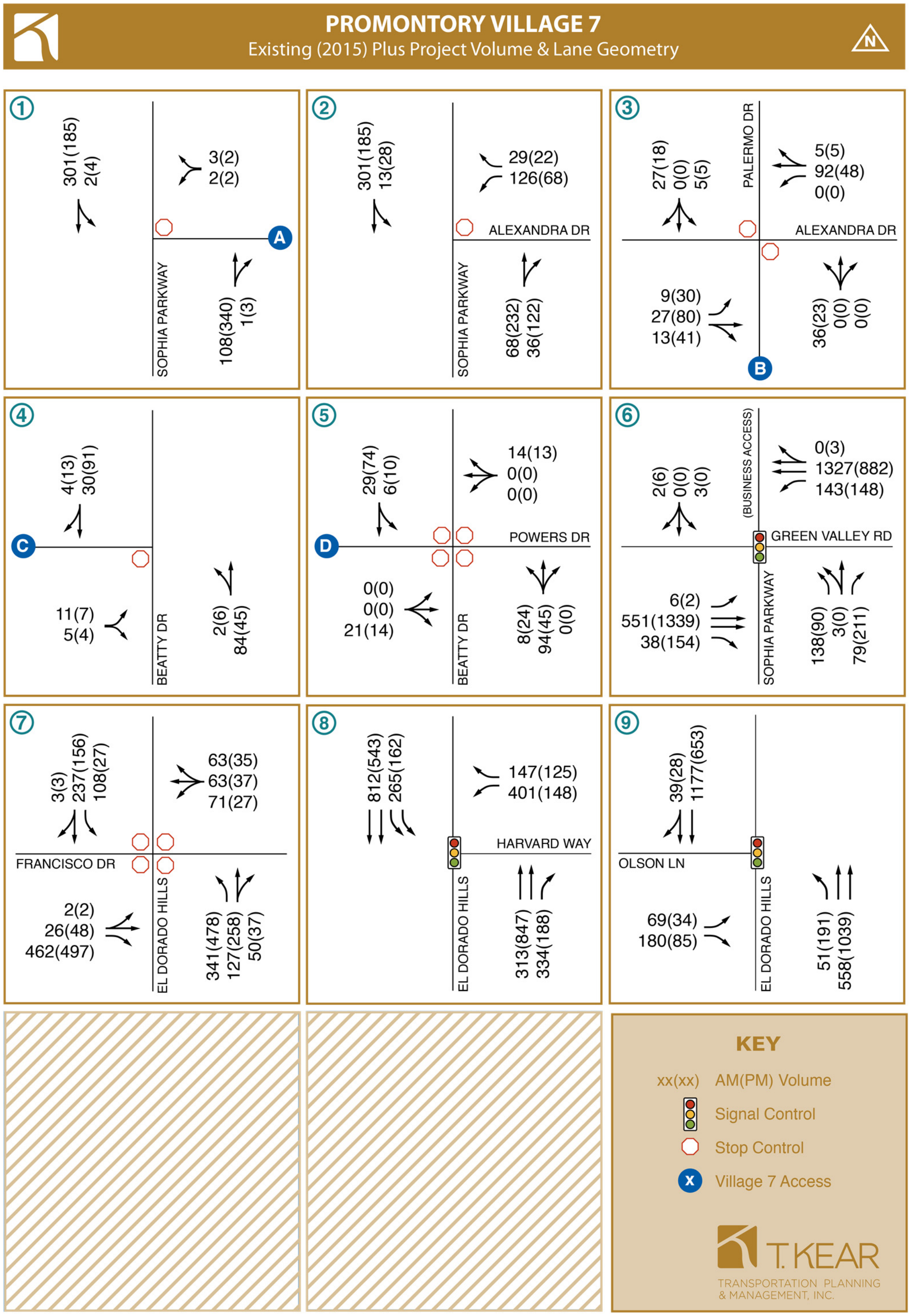

Figure 7. Existing 2015 + Project Lane Geometry and Turn Movements

Table 11. Existing 2015 Intersection Delay and Level-of-Service With and Without the Proposed Project

Study Intersection	Control	Existing 2015 No Project. AM	Existing 2015 No Project. PM	Existing 2015 Plus Project. AM	Existing 2015 Plus Project. PM
#1 Driveway A & Sophia Pkwy	TWSC[1]	n/a	n/a	10.0 B (WB)	11.5 B (WB)
#2 Alexandra Dr & Sophia Pkwy	TWSC[1]	11.8 B (WBL)	12.2 B (WBL)	12.7 B (WBL)	13.7 B (WBL)
#3 Driveway B & Alexandra Dr	TWSC[1]	9.1 A (SB)	9.0 A (SB)	10.4 B (NB)	10.7 B (NB)
#4 Driveway C & Beatty Dr	TWSC[1]	n/a	n/a	9.3 A (EB)	9.3 A (EB)
#5 Driveway D & Beatty Dr/Powers Dr	AWSC	7.6 A	7.3/ A	7.6 A	7.4 A
#6 Green Valley Rd & Sophia Pkwy	Signal	14.3 B	24.7 C	14.8 B	25.6 C
#7 El Dorado Hills Blvd & Francisco Dr	AWSC	21.2 C	26.6 D	21.4 C	27.2 D
#8 El Dorado Hills Blvd & Harvard Wy	Signal	11.7 A	7.6 A	12.9 B	8.5 A
#9 El Dorado Hills Blvd & Olson Ln	Signal	27.0 C	12.7 B	27.3 C	12.8 B

(1) For TWSC intersections, level-of-service is determined for each minor-street movement (or shared movement) as well as major-street left turns. Results are reported for the worst movement (or shared movement), and the worst movement (or shared movement) is reported in parentheses.

Table 12. Existing 2015 Segment Level-of-Service With and Without the Proposed Project

Study Segment	Segment Type	No Project ADT & LOS	Plus Project ADT & LOS	ADT ≤ 4K (Mitigation 4.5.1a)
A. Olson Ln – El Dorado Hills Blvd to Gillette Dr	2-lane undivided	2,963 B	3,448 B	OK
B. Ridgeview Dr – south of Gillette Dr		1,535 A	2,020 A	OK
C. Powers Dr – south of Mossridge Wy		727 A	1,212 A	OK
D. Betty Dr – south of Alexandra Dr		1,485 A	1,614 A	OK
E. Sophia Pkwy – south of Alexandra Dr		5,018 B	5,573 C	n/a
F. Sophia Pkwy – north of Alexandra Dr		4,061 B	4,438 B	n/a

Table 13. Existing 2015 95% queue length and available storage length with project

Study Intersection (Control Type)	Approach	Storage (feet)	No Proj. AM (Feet)	No Proj. PM (Feet)	Plus Proj. AM (feet)	Plus Proj. PM (feet)
#1 Driveway A & Sophia Pkwy (TWSC)	WB shared	n/a	0	0	0	0
	SB left	n/a	0	0	0	0
#2 Alexandra Dr & Sophia Pkwy (TWSC)	WB left	110	18	8	25	13
	WB right	n/a	0	0	3	3
	SB shared	n/a	0	0	0	3
#3 Driveway B & Alexandra Dr (TWSC)	NB shared	n/a	0	0	5	3
	EB left	50	0	0.3	0	3
	WB left	60	0	0	0	0
	SB shared	n/a	3	0.3	3	3
#4 Driveway C & Beatty Dr (TWSC)	NB shared	n/a	0	0	0	0
	EB shared	n/a	0	0	3	3
#5 Driveway D & Beatty Dr/Powers Dr (AWSC)	NB shared	n/a	13	3	15	8
	EB shared	n/a	0	0	3	3
	WB shared	n/a	0	3	0	3
	SB shared	n/a	3	8	3	8
#6 Green Valley Rd & Sophia Pkwy (Signal)	EB left	220	16	9	16	9
	EB through	n/a	192	#651	192	#651
	EB right	220	0	44	0	46
	WB left	230	#158	#181	#161	#192
	WB shared	n/a	#593	295	#593	295
	NB shared	200	62	49	67	53
	NB right	200	9	55	13	56
	SB shared	n/a	0	0	0	0
#7 El Dorado Hills Blvd & Francisco D (AWSC)	NB left	600	173	293	175	298
	NB shared	n/a	40	75	40	75
	EB shared	190	5	10	5	10
	WB shared	n/a	98	30	98	30
	SB left	100	33	8	33	8
	SB shared	n/a	105	75	105	78
#8 El Dorado Hills Blvd & Harvard Dr (Signal)	EB left	90	55	35	63	40
	EB right	n/a	25	31	25	33
	NB left	250	59	172	66	193
	NB through	n/a	112	255	112	255
	SB shared	n/a	#517	255	#527	259
#9 El Dorado Hills Blvd & Olson Ln (Signal)	WB left	n/a	308	122	313	128
	WB right	n/a	19	38	19	38
	NB through	n/a	111	243	112	247
	NB right	30	**119**	91	**123**	94
	SB left	200	118	70	118	71
	SB through	n/a	201	81	201	83

95% volume exceeds capacity, queue may be longer.

8.0 EPAP 2025 CONDITIONS

The Existing Plus Approved Project (EPAP) 2025 Conditions analysis utilizes lane configurations from Existing 2015 Conditions and turning movements derived from existing traffic counts, growth factors from the Travel Demand Model, and the NCHRP 255 adjustment procedure[12]. **Figure 8** summarizes the turning movements and lane configurations for the EPAP 2025 Conditions scenario.

Anticipated delay, level-of-service, and queueing are presented in **Table 14** through **Table 16** for the study intersections and segments. The results indicate that the all study intersections, and all study segments, operate at level-of-service E or better. Queuing at intersection #8 (El Dorado Hills Boulevard/Harvard Way) for the northbound right turn exceeds the length of the right turn flair on El Dorado Hills Boulevard. Since the right turn is a shared movement with the northbound through phase of the signal, this does not create an operational problem. Peak 15 minute capacities for some movements at intersection #6 (Green Valley Road/Sophia Parkway) are exceeded and actual queues may exceed those listed in **Table 16**, however where queue storage is limited by the length of a turn pocket, the pockets are longer than the anticipated queue lengths. Calculation sheets for intersection delay and level-of-service are provided in **Appendix B**.

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[12] Transportation Research Board (1982) National Cooperative Highway Research Program Report 255, Washington D.C.

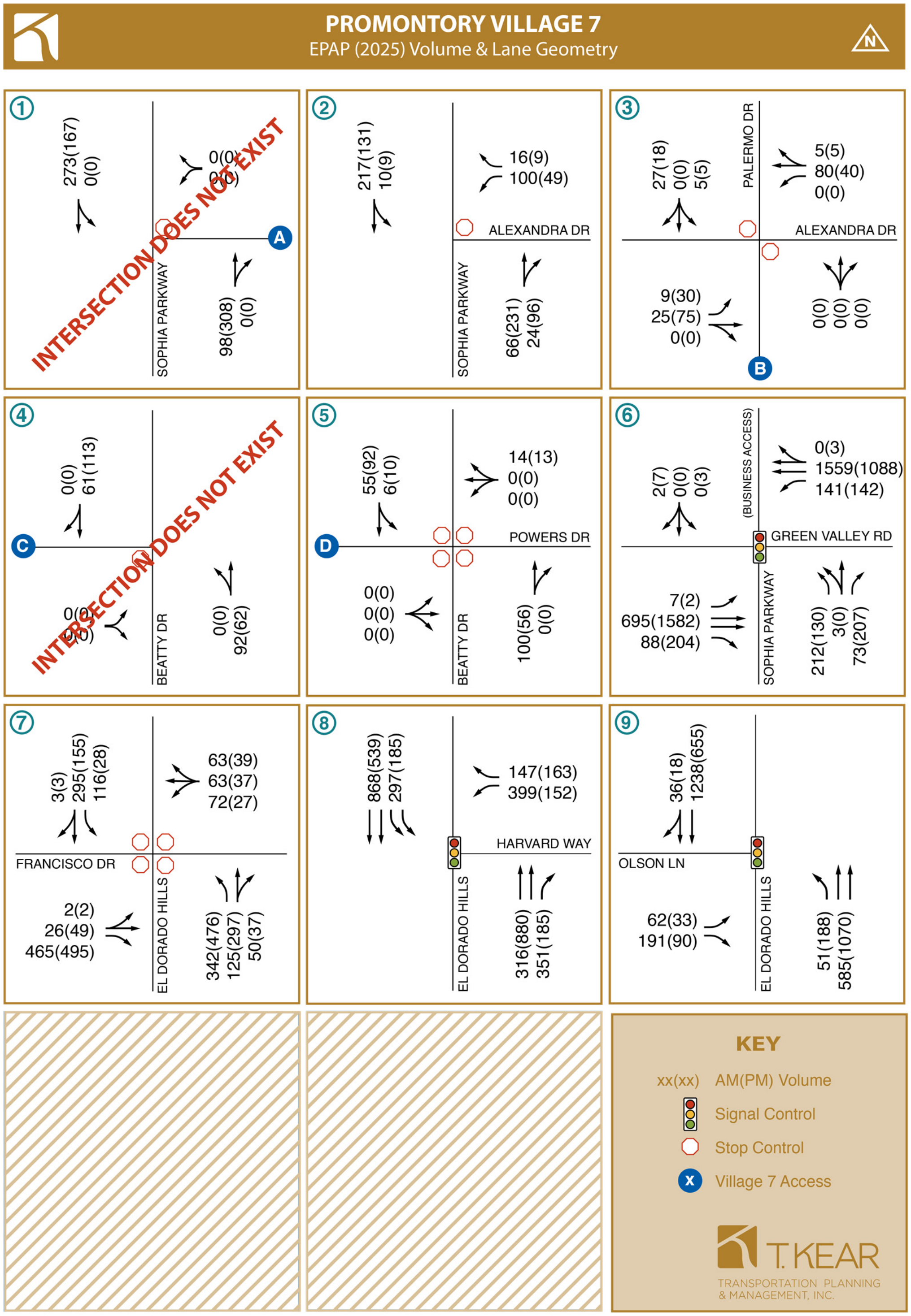


Figure 8.EPAP 2025 Conditions Lane Geometry and Turn Movements

Table 14. EPAP 2025 Intersection Delay and Level-of-Service

Study Intersection	Control	EPAP 2025 No Project. AM	EPAP 2025 No Project. PM
#1 Driveway A & Sophia Pkwy	TWSC[1]	n/a	n/a
#2 Alexandra Dr & Sophia Pkwy	TWSC[1]	12.0 B (WBL)	12.3 B (WBL)
#3 Driveway B & Alexandra Dr	TWSC[1]	9.2 A (SB)	9.0 A (SB)
#4 Driveway C & Beatty Dr	TWSC[1]	n/a	n/a
#5 Driveway D & Beatty Dr/Powers Dr	AWSC	7.7 A	7.4 A
#6 Green Valley Rd & Sophia Pkwy	Signal	21.3 C	36.8 D
#7 El Dorado Hills Blvd & Francisco Dr	AWSC	25.7 D	27.5 D
#8 El Dorado Hills Blvd & Harvard Wy	Signal	13.9 B	8.5 A
#9 El Dorado Hills Blvd & Olson Ln	Signal	28.7 C	14.5 B

(1) For TWSC intersections, level-of-service is determined for each minor-street movement (or shared movement) as well as major-street left turns. Results are reported for the worst movement (or shared movement), and the worst movement (or shared movement) is reported in parentheses.

Table 15. EPAP 2025 Segment Level-of-Service

Study Segment	Segment Type	No Project ADT & LOS	ADT ≤ 4K (Mitigation 4.5.1a)
A. Olson Ln – El Dorado Hills Blvd to Gillette Dr	2-lane undivided	3394 B	OK
B. Ridgeview Dr – south of Gillette Dr		1759 A	OK
C. Powers Dr – south of Mossridge Wy		833 A	OK
D. Betty Dr – south of Alexandra Dr		1954 A	OK
E. Sophia Pkwy – south of Alexandra Dr		5018 B	n/a
F. Sophia Pkwy – north of Alexandra Dr		4061 B	n/a

Table 16. EPAP 2025 95% queue length and available storage lengths without project

Study Intersection (Control Type)	Approach	Storage (feet)	No Proj. AM (Feet)	No Proj. PM (Feet)
#1 Driveway A & Sophia Pkwy (TWSC)	WB shared	n/a	0	0
	SB left	n/a	0	0
#2 Alexandra Dr & Sophia Pkwy (TWSC)	WB left	110	18	8
	WB right	n/a	3	0
	SB shared	n/a	0	0
#3 Driveway B & Alexandra Dr (TWSC)	NB shared	n/a	0	0
	EB left	50	0	3
	WB left	60	0	0
	SB shared	n/a	3	3
#4 Driveway C & Beatty Dr (TWSC)	NB shared	n/a	0	0
	EB shared	n/a	0	0
#5 Driveway D & Beatty Dr/Powers Dr (AWSC)	NB shared	n/a	15	5
	EB shared	n/a	0	0
	WB shared	n/a	0	3
	SB shared	n/a	8	10
#6 Green Valley Rd & Sophia Pkwy (Signal)	EB left	220	19	9
	EB through	n/a	247	#825
	EB right	220	28	68
	WB left	230	#172	#181
	WB shared	n/a	#755	395
	NB shared	200	104	71
	NB right	200	103	55
	SB shared	n/a	9	0
#7 El Dorado Hills Blvd & Francisco D (AWSC)	NB left	600	195	298
	NB shared	n/a	43	98
	EB shared	190	8	10
	WB shared	n/a	108	30
	SB left	100	35	8
	SB shared	n/a	178	78
#8 El Dorado Hills Blvd & Harvard Dr (Signal)	EB left	90	58	39
	EB right	n/a	24	34
	NB left	250	66	188
	NB through	n/a	118	265
	SB shared	n/a	#572	256
#9 El Dorado Hills Blvd & Olson Ln (Signal)	WB left	n/a	324	133
	WB right	n/a	19	42
	NB through	n/a	113	266
	NB right	30	**131**	**96**
	SB left	200	136	80
	SB through	n/a	217	83

95% volume exceeds capacity, queue may be longer.

9.0 EPAP 2025 PLUS PROPOSED PROJECT CONDITIONS

Peak-hour traffic associated with the proposed project was added to the EPAP 2025 Conditions Scenario traffic volumes, delay and level-of-service were determined at the study intersections and segments. **Figure 9** summarizes the turning movements and lane configurations for the Existing 2015 Plus Proposed Project scenario.

Table 17 through **Table 19** presents a summary of the level-of-service and queueing results for the study intersections and segments under EPAP 2025 Plus Project Conditions. The results mirror those from the Existing 2015 condition and EPAP 2025 conditions. All study intersections, and all study segments, are anticipated to operate at level-of-service E or better. Queuing at intersection #8 (El Dorado Hills Boulevard/Harvard Way) for the northbound right turn exceeds the length of the right turn flair on El Dorado Hills Boulevard. Since the right turn is a shared movement with the northbound through phase of the signal, this does not create an operational problem. Peak 15 minute capacities for some movements at intersection #6 (Green Valley Road/Sophia Parkway) are exceeded and actual queues may exceed those listed in **Table 19**, however where queue storage is limited by the length of a turn pocket, the pockets are longer than the anticipated queue lengths. Calculation sheets for intersection delay and level-of-service are provided in **Appendix B**.

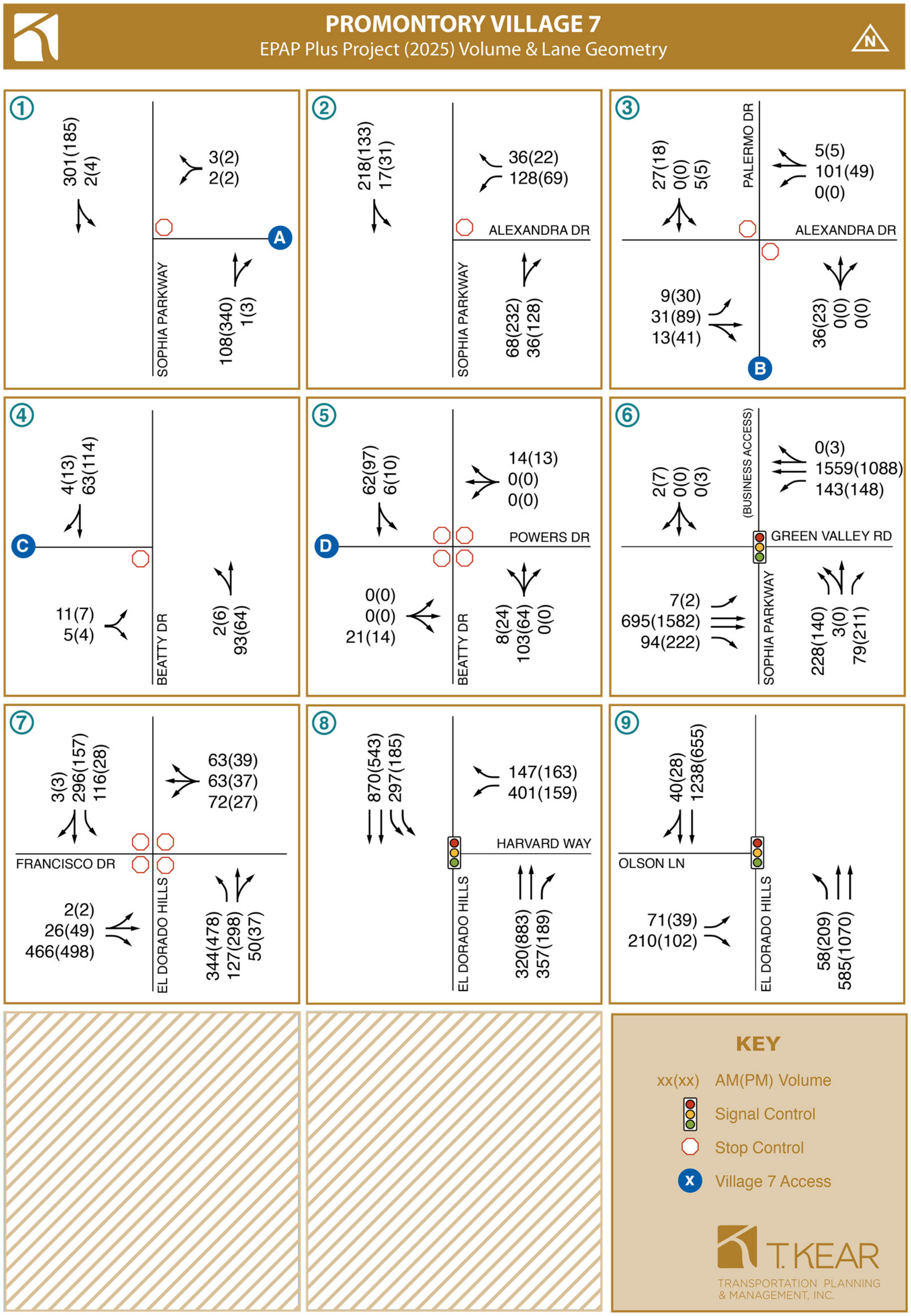


Figure 9. EPAP 2025 Plus Proposed Project Lane Geometry and Turn Movements.

Table 17. EPAP 2025 Intersection Delay and Level-of-Service With and Without the Proposed Project.

Study Intersection	Control	EPAP 2025 No Project. AM	EPAP 2025 No Project. PM	EPAP 2025 Plus Project. AM	EPAP 2025 Plus Project. PM
#1 Driveway A & Sophia Pkwy	TWSC[1]	n/a	n/a	10.0 B (WB)	11.5 B (WB)
#2 Alexandra Dr & Sophia Pkwy	TWSC[1]	12.0 B (WBL)	12.3 B (WBL)	12.9 B (WBL)	13.8 B (WBL)
#3 Driveway B & Alexandra Dr	TWSC[1]	9.2 A (SB)	9.0 A (SB)	10.5 B (NB)	10.8 B (NB)
#4 Driveway C & Beatty Dr	TWSC[1]	n/a	n/a	9.6 A (EB)	9.5 A (EB)
#5 Driveway D & Beatty Dr/Powers Dr	AWSC	7.7 A	7.4 A	7.7 A	7.6 A
#6 Green Valley Rd & Sophia Pkwy	Signal	21.3 C	36.8 D	22.1 C	38.1 D
#7 El Dorado Hills Blvd & Francisco Dr	AWSC	25.7 D	27.5 D	26.0 D	28.0 D
#8 El Dorado Hills Blvd & Harvard Wy	Signal	13.9 B	8.5 A	15.3 /B	9.4 A
#9 El Dorado Hills Blvd & Olson Ln	Signal	28.7 C	14.5 B	29.0 C	14.6 B

(1) For TWSC intersections, level-of-service is determined for each minor-street movement (or shared movement) as well as major-street left turns. Results are reported for the worst movement (or shared movement), and the worst movement (or shared movement) is reported in parentheses.

Table 18. EPAP 2025 Segment Level-of-Service With and Without the Proposed Project

Study Segment	Segment Type	No Project ADT & LOS	Plus Project ADT & LOS	ADT ≤ 4K (Mitigation 4.5.1a)
A. Olson Ln – El Dorado Hills Blvd to Gillette Dr	2-lane undivided	3394 B	3879 B	OK
B. Ridgeview Dr – south of Gillette Dr		1759 A	2244 B	OK
C. Powers Dr – south of Mossridge Wy		833 A	1318 A	OK
D. Betty Dr – south of Alexandra Dr		1954 A	2083 A	OK
E. Sophia Pkwy – south of Alexandra Dr		5018 B	5573 C	n/a
F. Sophia Pkwy – north of Alexandra Dr		4061 B	4438 B	n/a

Table 19. EPAP 2025 95% queue length and available storage length with project

Study Intersection (Control Type)	Approach	Storage (feet)	No Proj. AM (Feet)	No Proj. PM (Feet)	Plus Proj. AM (feet)	Plus Proj. PM (feet)
#1 Driveway A & Sophia Pkwy (TWSC)	WB shared	n/a	0	0	0	0
	SB left	n/a	0	0	0	0
#2 Alexandra Dr & Sophia Pkwy (TWSC)	WB left	110	18	8	25	15
	WB right	n/a	3	0	3	3
	SB shared	n/a	0	0	0	3
#3 Driveway B & Alexandra Dr (TWSC)	NB shared	n/a	0	0	5	3
	EB left	50	0	3	0	3
	WB left	60	0	0	0	0
	SB shared	n/a	3	3	3	3
#4 Driveway C & Beatty Dr (TWSC)	NB shared	n/a	0	0	0	0
	EB shared	n/a	0	0	3	3
#5 Driveway D & Beatty Dr/Powers Dr (AWSC)	NB shared	n/a	15	5	18	10
	EB shared	n/a	0	0	3	3
	WB shared	n/a	0	3	0	3
	SB shared	n/a	8	10	8	10
#6 Green Valley Rd & Sophia Pkwy (Signal)	EB left	220	19	9	19	9
	EB through	n/a	247	#825	247	#825
	EB right	220	28	68	32	73
	WB left	230	#172	#181	#176	#192
	WB shared	n/a	#755	395	#755	395
	NB shared	200	104	71	111	75
	NB right	200	103	55	109	56
	SB shared	n/a	9	0	13	0
#7 El Dorado Hills Blvd & Francisco D (AWSC)	NB left	600	195	298	198	303
	NB shared	n/a	43	98	43	100
	EB shared	190	8	10	8	10
	WB shared	n/a	108	30	108	30
	SB left	100	35	8	35	8
	SB shared	n/a	178	78	180	80
#8 El Dorado Hills Blvd & Harvard Dr (Signal)	EB left	90	58	39	65	45
	EB right	n/a	24	34	25	36
	NB left	250	66	188	72	211
	NB through	n/a	118	265	118	265
	SB shared	n/a	#572	256	#581	260
#9 El Dorado Hills Blvd & Olson Ln (Signal)	WB left	n/a	324	133	330	137
	WB right	n/a	19	42	20	42
	NB through	n/a	113	266	113	270
	NB right	30	**131**	**96**	**134**	**99**
	SB left	200	136	80	137	81
	SB through	n/a	217	83	218	86

95% volume exceeds capacity, queue may be longer.

10.0 ADDITIONAL CONSIDERATIONS

10.1 Signal Warrants

Both the Delay and Volume portions of the peak-hour signal warrant (Warrant 3) were checked under all study scenarios for the stop controlled study intersections. Results reported in **Table 20** show that none of the study intersections meets the peak-hour signal warrant. Signal warrant analysis worksheets are include in **Appendix C**.

Table 20. Peak-Hour Signal Warrant, AM and PM shown in parentheses

Scenario	**Part A (Delay) Warrant Met?**	**Part B (Volume) Warrant Met?**	**Warrant Met?**
#1 Driveway A & Sophia Pkwy			
Existing 2015	--	--	--
Existing 2015 Plus Project	no (no)	no (no)	no (no)
EPAP 2025	--	--	--
EPAP 2025 Plus Project	no (no)	no (no)	no (no)
#2 Alexandra Dr & Sophia Pkwy			
Existing 2015	no (no)	no (no)	no (no)
Existing 2015 Plus Project	no (no)	no (no)	no (no)
EPAP 2025	no (no)	no (no)	no (no)
EPAP 2025 Plus Project	no (no)	no (no)	no (no)
#3 Driveway B & Alexandra Dr			
Existing 2015	--	--	--
Existing 2015 Plus Project	no (no)	no (no)	no (no)
EPAP 2025	--	--	--
EPAP 2025 Plus Project	no (no)	no (no)	no (no)
#4 Driveway C & Beatty Dr			
Existing 2015	no (no)	no (no)	no (no)
Existing 2015 Plus Project	no (no)	no (no)	no (no)
EPAP 2025	no (no)	no (no)	no (no)
EPAP 2025 Plus Project	no (no)	no (no)	no (no)
#5 Driveway D & Beatty Dr/Powers Dr			
Existing 2015	no (no)	no (no)	no (no)
Existing 2015 Plus Project	no (no)	no (no)	no (no)
EPAP 2025	no (no)	no (no)	no (no)
EPAP 2025 Plus Project	no (no)	no (no)	no (no)
#7 El Dorado Hills Blvd & Francisco Dr			
Existing 2015	no (**yes** [LOS D])	no (no)	no (**yes** [LOS D])
Existing 2015 Plus Project	no (**yes** [LOS D])	no (no)	no (**yes** [LOS D])
EPAP 2025	no (**yes** [LOS D])	no (no)	no (**yes** [LOS D])
EPAP 2025Plus Project	no (**yes** [LOS D])	no (no)	no (**yes** [LOS D])

Source: Ca MUTCD 2014 Edition, Section 4C.04 (Warrant 3).

Only one study intersection (#7 El Dorado Hills Boulevard/Francisco Drive) meets the peak-hour signal warrant (used as an indicator for the potential to meet the related signal warrants). However Intersection #7 operates at an acceptable level-of-service under all study scenarios. The MUTCD states that the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal. A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection. The recently constructed channelized free right turn from eastbound Francisco Drive to southbound El Dorado Hills Boulevard constructed in 2014 resolves level-of-service concerns at this location, without signalization, through the EPAP 2025 Scenario, and signalization is not recommended at this time. Additionally, Promontory Village 7 does not worsen this intersection per General Plan Policy TC-Xe: at this intersection, the project generates less than 2% of the AM and PM peak hour or daily trips, does not add an additional 100 ADT and does not add an additional 10 AM or PM peak hours trips. Note that comparison to General Plan Policy TC-Xe are made only for illustrative purposes; the Promontory is bound by the 1996 General Plan Policies, and the measure Y policies enacted subsequent to the approval of the Specific Plan and Development Agreement are not applicable to Promontory Village 7.

10.2 Internal Circulation Review

Promontory Village 7 internal circulation was reviewed with a focus on:

- Traffic operations and throat depth adequacy at the intersections of the project access roads with Sophia Parkway, Alexandra Drive, and Beatty Drive.
- Documenting the consistency of the proposed circulation system with El Dorado County standards and the design guidelines from the Promontory Specific Plan.

Project Access

Project access is through intersection #1 (access A/Sophia Parkway), #3 (access B/Alexandra Drive), #4 (access C/Beatty Drive), and #5 (access D/Beatty Drive). Project access points operates at level-of-service B or better under all study scenarios. New intersections (#1 and #4) are assumed to be side-street-stop-controlled. 95th percentile queues entering the project are anticipated to one vehicle length (25’) or shorter; the El Dorado County minimum 25’ throat depth is adequate at all entrance gates. Site distance was field checked and found to be adequate at all planned access points. Lane geometry at project access points was assumed to be as shown in **Figure 7** and **Figure 9**.

Consistency with El Dorado County Road Standards.

All internal roads will be constructed to the standards set by the Promontory Specific Plan and incorporated into the General Plan. A secondary emergency access point will be provided north of intersection #1 (access A/Sophia Parkway) for emergency vehicles only.

11.0 IMPACTS AND MITIGATIONS

11.1 Existing 2015 Plus Project

There are no impacts or required mitigation under the Existing 2015 Plus Project Conditions Scenario.

Recommended Tentative Map Conditions for Existing 2015 Plus Project Conditions

Recommended conditions of approval consist of payment of TIM Fees.

11.2 EPAP 2025 Plus Project

There are no impacts or required mitigation under the EPAP 2025 Plus Project Conditions Scenario.

Recommended Tentative Map Conditions for EPAP 2025 Plus Project Conditions

Recommended conditions of approval consist of payment of TIM Fees.

Appendix A

Traffic Counts and Timing Sheets

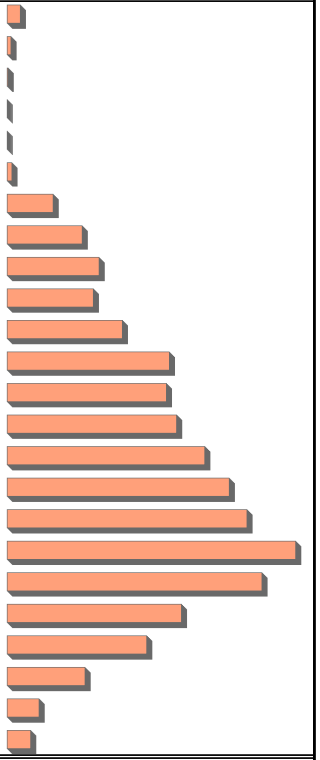
#1

Type of report: Tube Count - Volume Data

Page 1 of 1

LOCATION: Sophia Pkwy S of Alexandra Dr
SPECIFIC LOCATION: Sophia Pkwy S of Alexandra Dr
CITY/STATE: Folsom, CA

QC JOB #: 13566909
DIRECTION: NB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
		25-Aug-15								
12:00 AM		14				14			14	
1:00 AM		4				4			4	
2:00 AM		1				1			1	
3:00 AM		0				0			0	
4:00 AM		0				0			0	
5:00 AM		5				5			5	
6:00 AM		49				49			49	
7:00 AM		80				80			80	
8:00 AM		98				98			98	
9:00 AM		92				92			92	
10:00 AM		123				123			123	
11:00 AM		**173**				**173**			**173**	
12:00 PM		170				170			170	
1:00 PM		181				181			181	
2:00 PM		211				211			211	
3:00 PM		237				237			237	
4:00 PM		256				256			256	
5:00 PM		**308**				**308**			**308**	
6:00 PM		272				272			272	
7:00 PM		186				186			186	
8:00 PM		149				149			149	
9:00 PM		83				83			83	
10:00 PM		34				34			34	
11:00 PM		25				25			25	
Day Total		2751				2751			2751	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		11:00 AM 173				11:00 AM 173			11:00 AM 173	
PM Peak Volume		5:00 PM 308				5:00 PM 308			5:00 PM 308	

Comments:

Report generated on 8/31/2015 1:19 PM

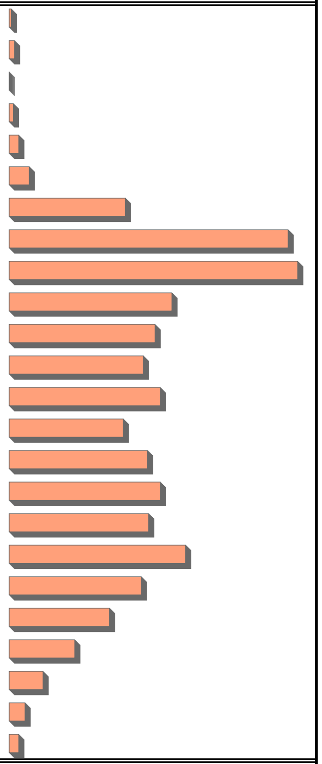
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Sophia Pkwy S of Alexandra Dr
SPECIFIC LOCATION: Sophia Pkwy S of Alexandra Dr
CITY/STATE: Folsom, CA

QC JOB #: 13566909
DIRECTION: SB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	**Mon**	**Tue** 25-Aug-15	**Wed**	**Thu**	**Fri**	**Average Weekday Hourly Traffic**	**Sat**	**Sun**	**Average Week Hourly Traffic**	**Average Week Profile**
12:00 AM		2				2			2	
1:00 AM		5				5			5	
2:00 AM		0				0			0	
3:00 AM		4				4			4	
4:00 AM		9				9			9	
5:00 AM		19				19			19	
6:00 AM		110				110			110	
7:00 AM		264				264			264	
8:00 AM		**273**				**273**			**273**	
9:00 AM		154				154			154	
10:00 AM		138				138			138	
11:00 AM		127				127			127	
12:00 PM		143				143			143	
1:00 PM		108				108			108	
2:00 PM		131				131			131	
3:00 PM		143				143			143	
4:00 PM		132				132			132	
5:00 PM		**167**				**167**			**167**	
6:00 PM		125				125			125	
7:00 PM		95				95			95	
8:00 PM		62				62			62	
9:00 PM		32				32			32	
10:00 PM		15				15			15	
11:00 PM		9				9			9	
Day Total		2267				2267			2267	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		8:00 AM 273				8:00 AM 273			8:00 AM 273	
PM Peak Volume		5:00 PM 167				5:00 PM 167			5:00 PM 167	



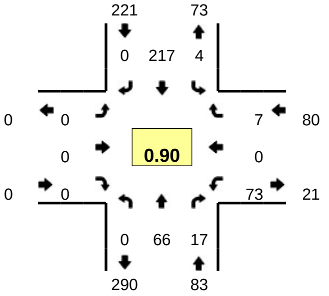
Comments:

Report generated on 8/31/2015 1:19 PM

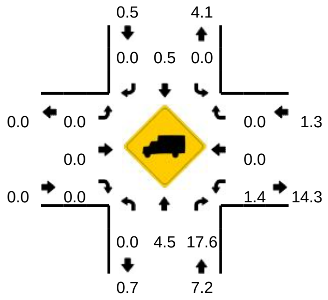
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

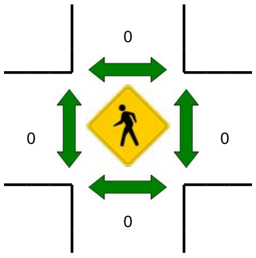
Type of peak hour being reported: Intersection Peak
Method for determining peak hour: Total Entering Volume

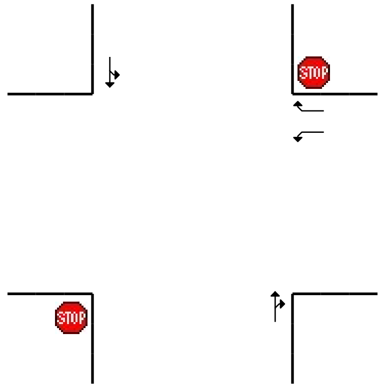
LOCATION: Sophia Pkwy -- Alexandra Dr
QC JOB #: 13566901
CITY/STATE: Folsom, CA
DATE: Tue, Aug 25 2015

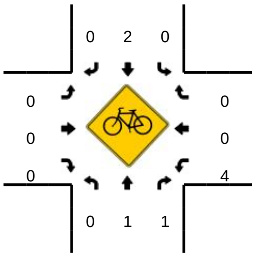


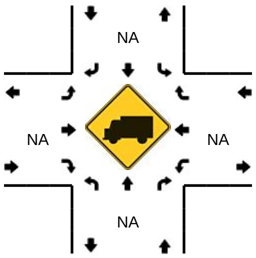
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 8:05 AM -- 8:20 AM

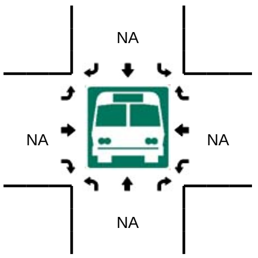












5-Min Count Period Beginning At	Sophia Pkwy (Northbound)				Sophia Pkwy (Southbound)				Alexandra Dr (Eastbound)				Alexandra Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	6	0	4	14	0	0	0	0	0	0	1	0	0	0	27	164
7:05 AM	0	3	2	0	0	14	0	0	0	0	0	0	0	0	1	0	20	179
7:10 AM	0	2	5	0	1	16	0	0	0	0	0	0	5	0	0	0	29	204
7:15 AM	0	4	2	0	2	14	0	0	0	0	0	0	2	0	1	0	25	224
7:20 AM	0	2	0	0	1	13	0	0	0	0	0	0	4	0	1	0	21	232
7:25 AM	0	4	1	0	0	21	0	0	0	0	0	0	1	0	1	0	28	252
7:30 AM	0	2	1	0	0	16	0	0	0	0	0	0	4	0	1	0	24	258
7:35 AM	0	1	0	0	0	15	0	0	0	0	0	0	4	0	1	0	21	270
7:40 AM	0	6	1	0	1	21	0	0	0	0	0	0	6	0	0	0	35	288
7:45 AM	0	4	2	0	0	22	0	0	0	0	0	0	7	0	1	0	36	307
7:50 AM	0	8	2	0	0	18	0	0	0	0	0	0	6	0	0	0	34	324
7:55 AM	0	5	1	0	0	22	0	0	0	0	0	0	8	0	0	0	36	336
8:00 AM	0	4	1	0	1	26	0	0	0	0	0	0	4	0	0	0	36	345
8:05 AM	0	3	1	0	0	19	0	0	0	0	0	0	3	0	0	0	26	351
8:10 AM	0	11	0	0	0	22	0	0	0	0	0	0	6	0	1	0	40	362
8:15 AM	0	8	1	0	0	18	0	0	0	0	0	0	13	0	1	0	41	378
8:20 AM	0	2	2	0	0	13	0	0	0	0	0	0	7	0	1	0	25	382
8:25 AM	0	6	2	0	0	8	0	0	0	0	0	0	6	0	0	0	22	376
8:30 AM	0	4	1	0	2	13	0	0	0	0	0	0	3	0	0	0	23	375
8:35 AM	0	5	3	0	0	15	0	0	0	0	0	0	4	0	3	0	30	384
8:40 AM	0	0	1	1	2	20	0	0	0	0	0	0	4	0	0	0	28	377
8:45 AM	0	9	3	0	0	21	0	0	0	0	0	0	1	0	1	0	35	376
8:50 AM	0	5	3	0	1	29	0	0	0	0	0	0	3	0	0	0	41	383
8:55 AM	0	4	2	0	2	17	0	0	0	0	0	0	2	0	1	0	28	375

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	88	8	0	0	236	0	0	0	0	0	0	88	0	8	0	428
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	1	0		0	2	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 8/31/2015 1:13 PM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

#2

Type of peak hour being reported: Intersection Peak

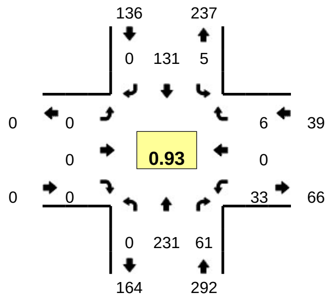
Method for determining peak hour: Total Entering Volume

LOCATION: Sophia Pkwy -- Alexandra Dr

CITY/STATE: Folsom, CA

QC JOB #: 13566903

DATE: Tue, Aug 25 2015

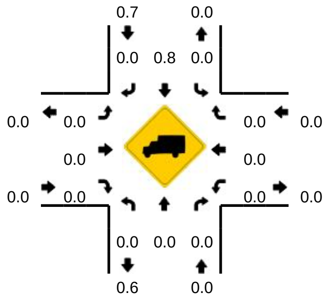


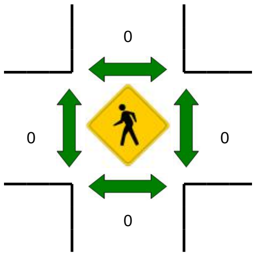
Peak-Hour: 5:00 PM -- 6:00 PM

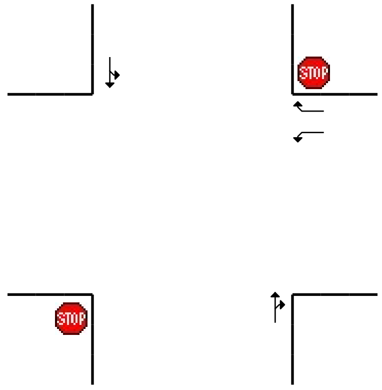
Peak 15-Min: 5:05 PM -- 5:20 PM

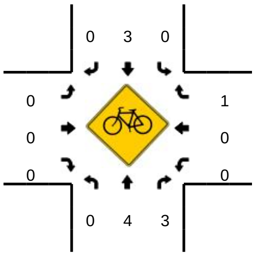
Quality Counts

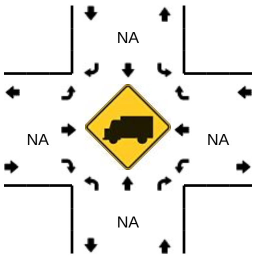
TRANSPORTATION DATA COLLECTION SERVICES

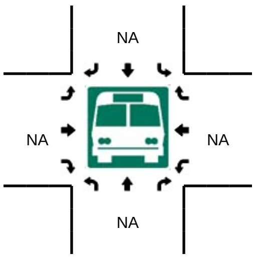












5-Min Count Period Beginning At	Sophia Pkwy (Northbound)				Sophia Pkwy (Southbound)				Alexandra Dr (Eastbound)				Alexandra Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	18	7	0	1	10	0	0	0	0	0	0	3	0	2	0	41	393
4:05 PM	0	15	4	0	0	10	0	0	0	0	0	0	3	0	0	0	32	398
4:10 PM	0	17	2	0	0	5	0	0	0	0	0	0	2	0	1	0	27	389
4:15 PM	0	27	4	0	0	5	0	0	0	0	0	0	3	0	0	0	39	390
4:20 PM	0	17	4	0	1	9	0	0	0	0	0	0	3	0	1	0	35	396
4:25 PM	0	8	6	0	0	10	0	0	0	0	0	0	2	0	1	0	27	391
4:30 PM	0	20	3	0	0	8	0	0	0	0	0	0	3	0	5	0	39	406
4:35 PM	0	15	3	0	1	2	0	0	0	0	0	0	8	0	0	0	29	408
4:40 PM	0	14	4	0	1	10	0	0	0	0	0	0	4	0	2	0	35	401
4:45 PM	0	17	7	0	1	6	0	0	0	0	0	0	4	0	0	0	35	398
4:50 PM	0	16	3	0	1	5	0	0	0	0	0	0	3	0	0	0	28	397
4:55 PM	0	15	10	0	0	10	0	0	0	0	0	0	0	0	0	0	35	402
5:00 PM	0	15	1	0	1	14	0	0	0	0	0	0	1	0	0	0	32	393
5:05 PM	0	23	5	0	0	13	0	0	0	0	0	0	3	0	0	0	44	405
5:10 PM	0	16	7	0	1	11	0	0	0	0	0	0	4	0	1	0	40	418
5:15 PM	0	21	5	0	2	10	0	0	0	0	0	0	3	0	0	0	41	420
5:20 PM	0	22	3	0	0	16	0	0	0	0	0	0	2	0	1	0	44	429
5:25 PM	0	24	5	0	0	7	0	0	0	0	0	0	4	0	0	0	40	442
5:30 PM	0	19	5	0	0	13	0	0	0	0	0	0	2	0	1	0	40	443
5:35 PM	0	12	4	0	0	9	0	0	0	0	0	0	4	0	0	0	29	443
5:40 PM	0	24	6	0	1	6	0	0	0	0	0	0	1	0	0	0	38	446
5:45 PM	0	17	5	0	0	13	0	0	0	0	0	0	4	0	2	0	41	452
5:50 PM	0	17	5	0	0	8	0	0	0	0	0	0	3	0	1	0	34	458
5:55 PM	0	21	10	0	0	11	0	0	0	0	0	0	2	0	0	0	44	467

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	240	68	0	12	136	0	0	0	0	0	0	40	0	4	0	500
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	2	0		0	1	0		0	0	0		0	0	1		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 8/31/2015 1:13 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

#3

Lot H Traffic

Turning movements were estimated for Existing (2015) Conditions at intersection #3 Alexandria Drive/Access B because the adjacent Promontory - Lot H is currently under constructions. The remainder of this sub-section documents how turning movements were derived

Trip generation rates from the Promontory Lot H Traffic Impact Study[1] are shown in Table 1 below. These rates are slightly higher than current Institute of Transportation Engineers rates[2] and were combined with the trip distribution data from page 33 in the body of the TIA report, and counts from adjacent intersections to estimate turning movements for the Alexandria Drive/Access B intersection.

Table 1. Promontory - Lot H Trip Generation

Single Family Residential Land Use	AM Peak				PM Peak			
	Rate[a]	in	out	Tot.	Rate[a]	in	out	Tot.
69 Units	0.75	13	39	52	1.01	44	26	70

a) AM and PM peak hour rates are for the peak period of adjacent street traffic represented as trips per unit, ITE Code 210.

Trip distribution being used for this Promontory Village 7 study consists of:

- 3% east via Sophia Parkway north to and Green Valley Road east
- 6% north via Francisco Drive,
- 2% north via El Dorado Hills Boulevard,
- 7% east via Harvard Way,
- 4% east via Serrano Parkway,
- 15% east via US 50,
- 5% south via Latrobe Road,
- 20% west via Sophia Parkway north and Green Valley Road west, and
- 38% south via Sophia Parkway (into Folsom and US 50 west).

Which can be summarized locally as:

- 31% north via Sophia Parkway
- 38% south Sophia Parkway, and
- 31% East via Alexandria Drive.

Lot H has two gated access points, one of which is intersection #3 for this study, and the second is the Alexandria Drive/Beatty Drive intersection. All Lot H traffic to/from the east is assumed to use the Alexandria Drive/Beatty Drive access point. However, a floor of 5 vehicles was used for all turning movements to make sure that the estimates were conservative.

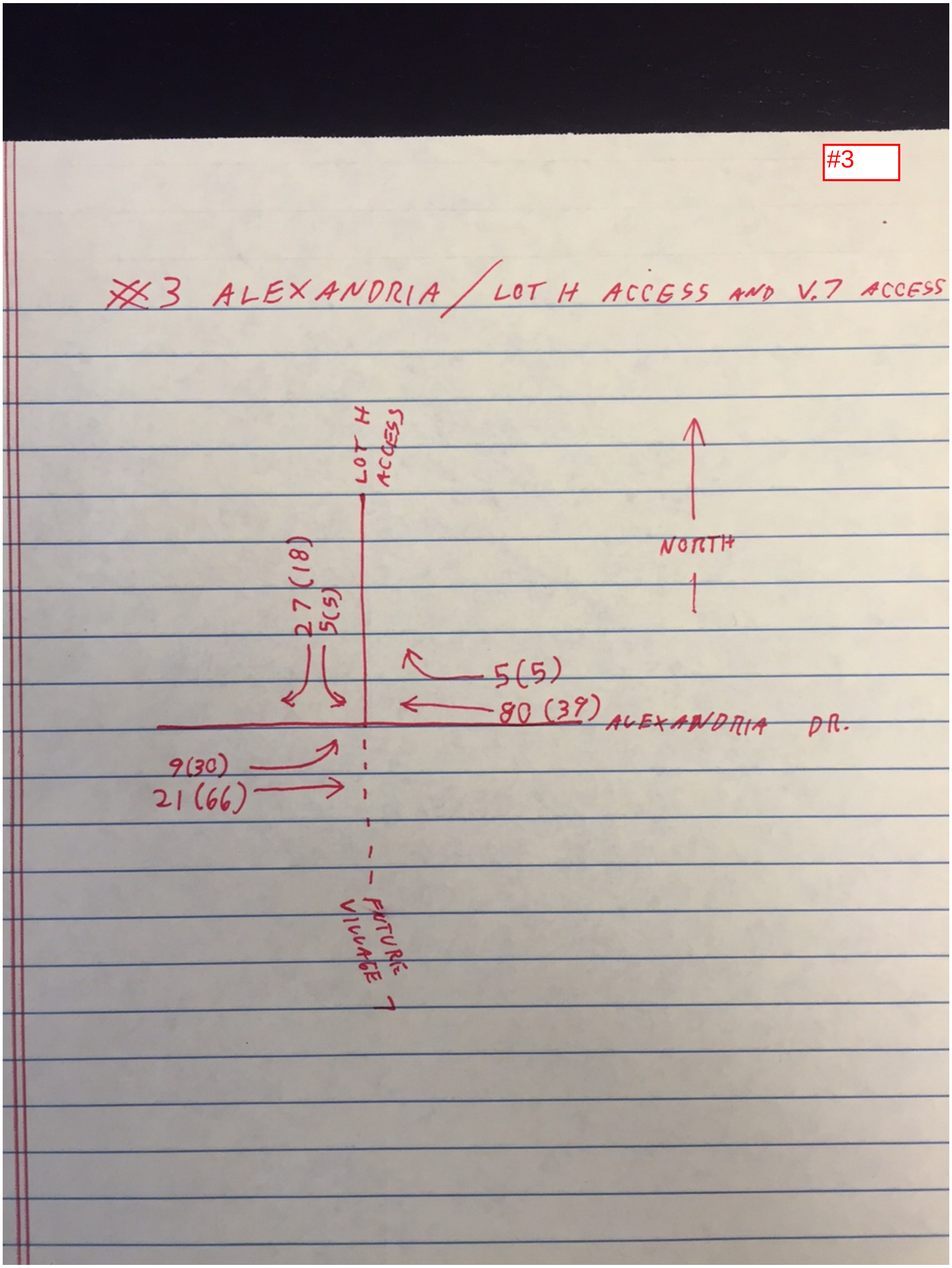
---

[1] Promontory – Lot H Traffic Impact Study (2006) Fehr and Peers Associates, Inc.

[22] ITE (2012) Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington, DC.

- The EB left turn from Alexandria Drive to Lot H is anticipated to be 9 vehicles during the AM peak hour and 30 vehicles during the PM peak hour.
- The SB right turn from Lot H to WB Alexandria Drive is anticipated to be 27 vehicles during the AM peak hour and 18 vehicles during the PM peak hour.
- The SB left turn from Lot H EB Alexandria Drive is anticipated to be zero, but is assumed to be 5 vehicles during the AM peak hour and 5 vehicles during the PM peak hour for calculation purposes.
- The WB right turn from Alexandria Drive to Lot H is anticipated to be zero, but is assumed to be 5 vehicles during the AM peak hour and 5 vehicles during the PM peak hour for calculation purposes.
- The WB through movement on Alexandria Drive is 80 vehicles during the AM peak hour and 39 vehicles during the PM peak hour (based on Counts at #2 Sophia Parkway/Alexandria Drive).
- The EB through movement on Alexandria Drive is 21 vehicles during the AM peak hour and 66 vehicles during the PM peak hour (based on Counts at #2 Sophia Parkway/Alexandria Drive).

#3



#3 ALEXANDRIA / LOT H ACCESS AND V.7 ACCESS

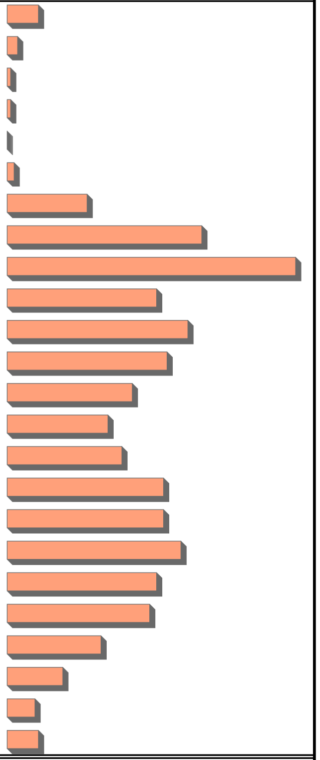
#4

Type of report: Tube Count - Volume Data

LOCATION: Beatty Dr S of Alexandra Dr
SPECIFIC LOCATION: Beatty Dr S of Alexandra Dr
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566908
DIRECTION: NB
DATE: Sep 02 2015 - Sep 02 2015

Start Time	**Mon**	**Tue**	**Wed** 02-Sep-15	**Thu**	**Fri**	**Average Weekday Hourly Traffic**	**Sat**	**Sun**	**Average Week Hourly Traffic**	**Average Week Profile**
12:00 AM			9			9			9	
1:00 AM			3			3			3	
2:00 AM			1			1			1	
3:00 AM			1			1			1	
4:00 AM			0			0			0	
5:00 AM			2			2			2	
6:00 AM			23			23			23	
7:00 AM			56			56			56	
8:00 AM			**83**			**83**			**83**	
9:00 AM			43			43			43	
10:00 AM			52			52			52	
11:00 AM			46			46			46	
12:00 PM			36			36			36	
1:00 PM			29			29			29	
2:00 PM			33			33			33	
3:00 PM			45			45			45	
4:00 PM			45			45			45	
5:00 PM			**50**			**50**			**50**	
6:00 PM			43			43			43	
7:00 PM			41			41			41	
8:00 PM			27			27			27	
9:00 PM			16			16			16	
10:00 PM			8			8			8	
11:00 PM			9			9			9	
Day Total			701			701			701	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			8:00 AM 83			8:00 AM 83			8:00 AM 83	
PM Peak Volume			5:00 PM 50			5:00 PM 50			5:00 PM 50	



Comments:

Report generated on 9/7/2015 10:54 AM

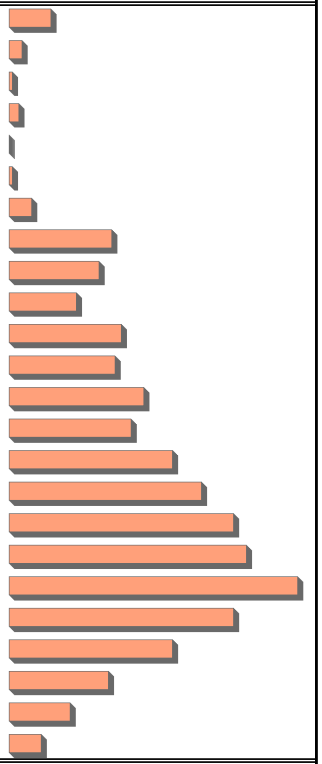
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

#4

Type of report: Tube Count - Volume Data

LOCATION: Beatty Dr S of Alexandra Dr
SPECIFIC LOCATION: Beatty Dr S of Alexandra Dr
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566908
DIRECTION: SB
DATE: Sep 02 2015 - Sep 02 2015

Start Time	**Mon**	**Tue**	**Wed** 02-Sep-15	**Thu**	**Fri**	**Average Weekday Hourly Traffic**	**Sat**	**Sun**	**Average Week Hourly Traffic**	**Average Week Profile**
12:00 AM			13			13			13	
1:00 AM			4			4			4	
2:00 AM			1			1			1	
3:00 AM			3			3			3	
4:00 AM			0			0			0	
5:00 AM			1			1			1	
6:00 AM			7			7			7	
7:00 AM			32			32			32	
8:00 AM			28			28			28	
9:00 AM			21			21			21	
10:00 AM			**35**			**35**			**35**	
11:00 AM			33			33			33	
12:00 PM			42			42			42	
1:00 PM			38			38			38	
2:00 PM			51			51			51	
3:00 PM			60			60			60	
4:00 PM			70			70			70	
5:00 PM			74			74			74	
6:00 PM			**90**			**90**			**90**	
7:00 PM			70			70			70	
8:00 PM			51			51			51	
9:00 PM			31			31			31	
10:00 PM			19			19			19	
11:00 PM			10			10			10	
Day Total			784			784			784	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			10:00 AM 35			10:00 AM 35			10:00 AM 35	
PM Peak Volume			6:00 PM 90			6:00 PM 90			6:00 PM 90	

Comments:

Report generated on 9/7/2015 10:54 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

#5

Type of peak hour being reported: Intersection Peak

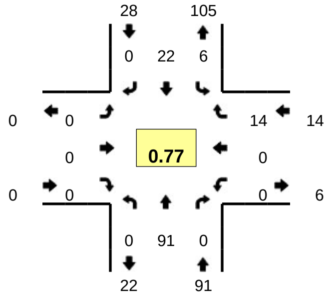
Method for determining peak hour: Total Entering Volume

LOCATION: Beatty Dr -- Powers Dr/Access Dwy

CITY/STATE: El Dorado Hills, CA

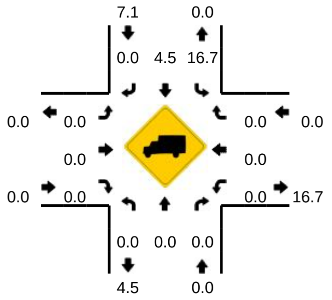
QC JOB #: 13566902

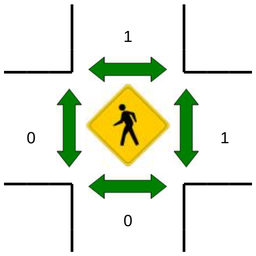
DATE: Tue, Aug 25 2015

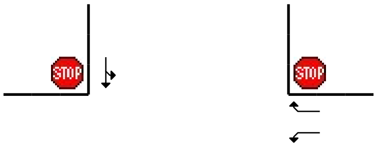


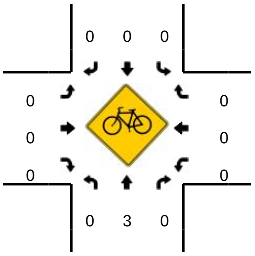
Peak-Hour: 7:40 AM -- 8:40 AM

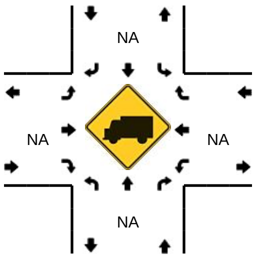
Peak 15-Min: 8:05 AM -- 8:20 AM

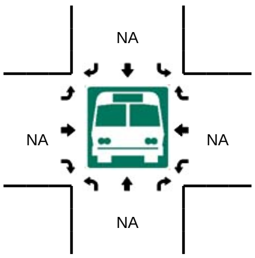












5-Min Count Period Beginning At	Beatty Dr (Northbound)				Beatty Dr (Southbound)				Powers Dr/Access Dwy (Eastbound)				Powers Dr/Access Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	41
7:05 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	46
7:10 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	47
7:15 AM	0	5	0	0	0	1	0	0	0	0	0	0	0	0	2	0	8	54
7:20 AM	0	2	0	0	2	1	0	0	0	0	0	0	0	0	1	0	6	55
7:25 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	7	60
7:30 AM	0	3	0	0	1	1	0	0	0	0	0	0	0	0	2	0	7	65
7:35 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	63
7:40 AM	0	8	0	0	0	1	0	0	0	0	0	0	0	0	1	0	10	70
7:45 AM	0	6	0	0	1	1	0	0	0	0	0	0	0	0	0	0	8	73
7:50 AM	0	12	0	0	1	2	0	0	0	0	0	0	0	0	1	0	16	83
7:55 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	84
8:00 AM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7	89
8:05 AM	0	11	0	0	2	2	0	0	0	0	0	0	0	0	1	0	16	100
8:10 AM	0	14	0	0	0	2	0	0	0	0	0	0	0	0	1	0	17	112
8:15 AM	0	8	0	0	1	1	0	0	0	0	0	0	0	0	0	0	10	114
8:20 AM	0	7	0	0	0	1	0	0	0	0	0	0	0	0	2	0	10	118
8:25 AM	0	4	0	0	0	5	0	0	0	0	0	0	0	0	3	0	12	123
8:30 AM	0	4	0	0	1	2	0	0	0	0	0	0	0	0	3	0	10	126
8:35 AM	0	9	0	0	0	1	0	0	0	0	0	0	0	0	2	0	12	133
8:40 AM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	128
8:45 AM	0	5	0	0	1	2	0	0	0	0	0	0	0	0	1	0	9	129
8:50 AM	0	3	0	0	1	2	0	0	0	0	0	0	1	0	0	0	7	120
8:55 AM	0	4	0	0	3	1	0	0	0	0	0	0	0	0	0	0	8	123

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	132	0	0	12	20	0	0	0	0	0	0	0	0	8	0	172
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 8/31/2015 1:13 PM

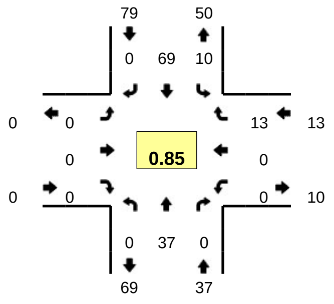
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

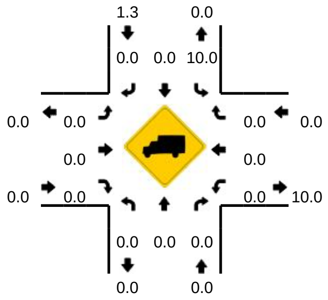
#5

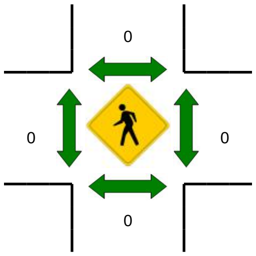
Type of peak hour being reported: Intersection Peak
Method for determining peak hour: Total Entering Volume

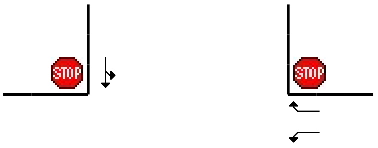
LOCATION: Beatty Dr -- Powers Dr/Access Dwy
QC JOB #: 13566904
CITY/STATE: El Dorado Hills, CA
DATE: Tue, Aug 25 2015

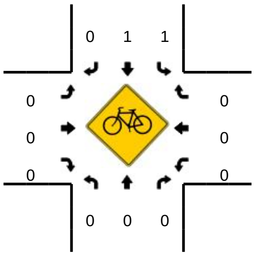
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

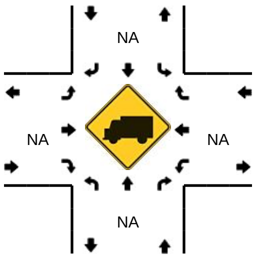


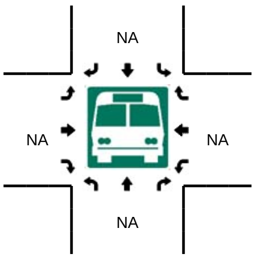












5-Min Count Period Beginning At	Beatty Dr (Northbound) Left	Thru	Right	U	Beatty Dr (Southbound) Left	Thru	Right	U	Powers Dr/Access Dwy (Eastbound) Left	Thru	Right	U	Powers Dr/Access Dwy (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	0	3	0	0	1	2	0	0	0	0	0	0	0	0	0	0	6	104
4:05 PM	0	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	9	107
4:10 PM	0	4	0	0	1	2	0	0	0	0	0	0	0	0	0	0	7	104
4:15 PM	0	3	0	0	0	7	0	0	0	0	0	0	0	0	1	0	11	104
4:20 PM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6	103
4:25 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	99
4:30 PM	0	11	0	0	2	5	0	0	0	0	0	0	0	0	0	0	18	105
4:35 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	107
4:40 PM	0	5	0	0	1	1	0	0	0	0	0	0	0	0	1	0	8	104
4:45 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	3	100
4:50 PM	0	2	0	0	1	5	0	0	0	0	0	0	0	0	1	0	9	102
4:55 PM	0	3	0	0	1	4	0	0	0	0	0	0	0	0	0	0	8	99
5:00 PM	0	1	0	0	1	5	0	0	0	0	0	0	0	0	0	0	7	100
5:05 PM	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	6	97
5:10 PM	0	3	0	0	0	7	0	0	0	0	0	0	0	0	4	0	14	104
5:15 PM	0	2	0	0	1	7	0	0	0	0	0	0	0	0	3	0	13	106
5:20 PM	0	5	0	0	1	4	0	0	0	0	0	0	0	0	1	0	11	111
5:25 PM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	2	0	9	113
5:30 PM	0	3	0	0	4	4	0	0	0	0	0	0	0	0	0	0	11	106
5:35 PM	0	1	0	0	0	6	0	0	0	0	0	0	0	0	2	0	9	108
5:40 PM	0	7	0	0	1	6	0	0	0	0	0	0	0	0	0	0	14	114
5:45 PM	0	4	0	0	1	8	0	0	0	0	0	0	0	0	0	0	13	124
5:50 PM	0	3	0	0	0	5	0	0	0	0	0	0	0	0	1	0	9	124
5:55 PM	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	0	13	129

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	40	0	0	8	72	0	0	0	0	0	0	0	0	32	0	152
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

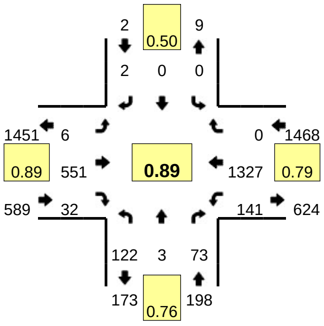
Report generated on 8/31/2015 1:13 PM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

#6

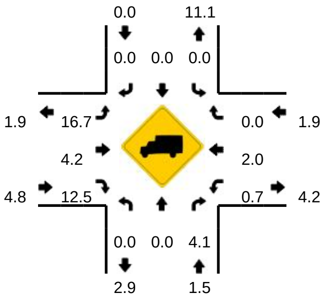
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

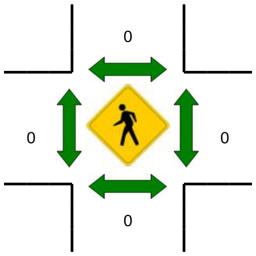
LOCATION: Green Valley Rd -- Sophia Pkwy
CITY/STATE: El Dorado Hills, CA

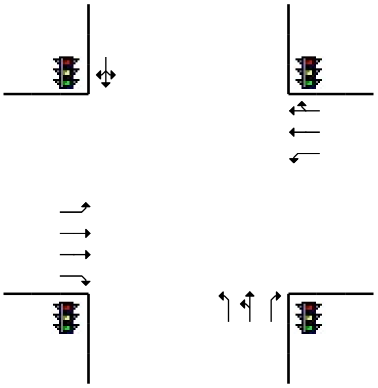
QC JOB #: 12004701
DATE: Tue, May 06 2014

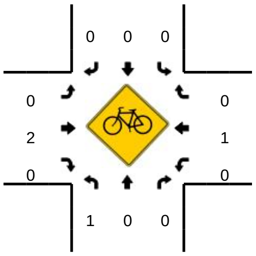


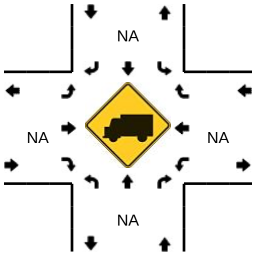
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

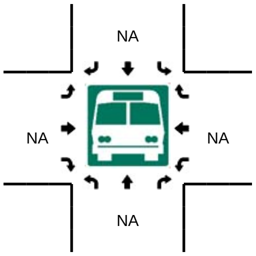












5-Min Count Period Beginning At	Green Valley Rd (Northbound)				Green Valley Rd (Southbound)				Sophia Pkwy (Eastbound)				Sophia Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:45 AM	6	1	1	0	0	0	0	0	2	45	3	0	5	87	1	0	151	
6:50 AM	9	1	2	0	0	0	0	0	1	35	5	0	5	78	1	0	137	
6:55 AM	10	0	3	0	0	0	2	0	2	41	6	0	8	60	0	0	132	
7:00 AM	7	0	1	0	0	0	0	0	2	43	6	0	8	66	0	0	133	
7:05 AM	11	0	3	0	0	0	0	0	1	44	3	0	3	94	0	0	159	
7:10 AM	8	0	0	0	0	0	0	0	1	32	1	0	11	91	0	0	144	
7:15 AM	11	0	6	0	0	0	0	0	0	45	2	0	8	107	0	0	179	
7:20 AM	7	0	8	0	0	0	0	0	0	38	0	0	5	99	0	0	157	
7:25 AM	13	0	16	0	0	0	0	0	0	52	3	0	13	92	0	0	189	1695
7:30 AM	7	2	10	0	0	0	0	0	1	44	1	0	11	123	0	0	199	1808
7:35 AM	11	0	6	0	0	0	1	0	1	57	6	0	12	117	0	0	211	1907
7:40 AM	3	1	3	0	0	0	0	0	0	35	2	0	23	129	0	0	196	1987
7:45 AM	14	0	2	0	0	0	1	0	0	49	1	0	23	121	0	0	211	2047
7:50 AM	13	0	4	0	0	0	0	0	0	37	5	0	15	156	0	0	230	2140
7:55 AM	12	0	8	0	0	0	0	0	3	47	1	0	6	112	0	0	189	2197
8:00 AM	10	0	4	0	0	0	0	0	1	39	3	0	7	89	0	0	153	2217
8:05 AM	10	0	3	0	0	0	0	0	0	57	5	0	10	99	0	0	184	2242
8:10 AM	11	0	3	0	0	0	0	0	0	51	3	0	8	83	0	0	159	2257
8:15 AM	7	0	8	0	0	0	1	0	0	42	3	0	17	95	0	0	173	2251
8:20 AM	5	0	5	0	0	0	0	0	1	43	1	0	5	85	0	0	145	2239
8:25 AM	7	0	11	0	0	0	1	0	0	61	3	0	12	86	0	0	181	2231
8:30 AM	3	0	7	0	0	0	0	0	0	48	8	0	5	70	0	0	141	2173
8:35 AM	6	0	2	0	0	0	2	0	0	59	0	0	16	78	1	0	164	2126
8:40 AM	8	0	10	0	0	0	0	0	0	41	6	0	14	96	0	0	175	2105

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	120	4	36	0	0	0	4	0	0	484	32	0	244	1624	0	0	2548
Heavy Trucks	0	0	8		0	0	0		0	20	0		4	28	0		60
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 8/1/2014 2:29 AM

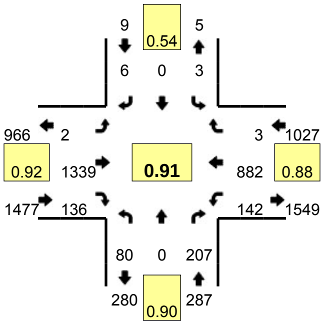
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

#6

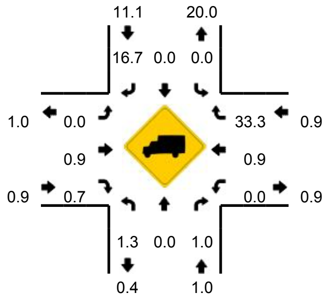
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Green Valley Rd -- Sophia Pkwy | **QC JOB #:** 12004702

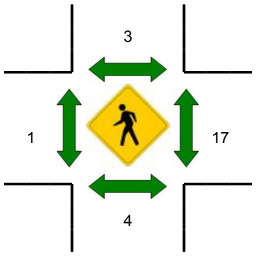
CITY/STATE: El Dorado Hills, CA | **DATE:** Tue, May 06 2014

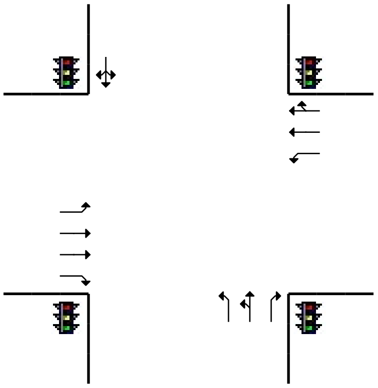


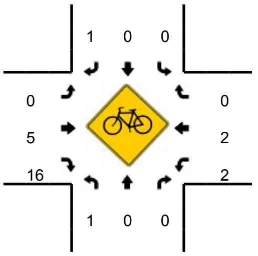
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

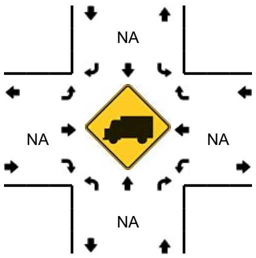


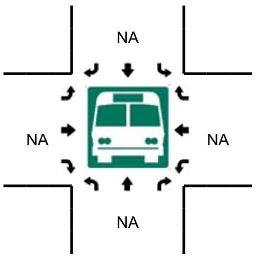
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES











5-Min Count Period Beginning At	Green Valley Rd (Northbound)				Green Valley Rd (Southbound)				Sophia Pkwy (Eastbound)				Sophia Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	7	1	11	0	0	0	0	0	0	106	8	0	5	69	1	0	208	2410
4:35 PM	3	0	17	0	0	1	1	0	0	94	9	0	13	66	0	0	204	2424
4:40 PM	5	0	5	0	1	0	0	0	0	106	12	0	12	72	0	0	213	2445
4:45 PM	6	0	16	0	0	0	0	0	0	93	6	0	19	63	0	0	203	2456
4:50 PM	3	0	8	0	0	0	0	0	0	116	14	0	7	77	0	0	225	2491
4:55 PM	2	0	17	0	0	0	2	0	1	99	7	0	11	74	0	0	213	2484
5:00 PM	6	0	11	0	1	0	1	0	1	110	9	0	8	78	0	0	225	2512
5:05 PM	8	0	26	0	0	0	0	0	0	99	11	0	8	66	0	0	218	2531
5:10 PM	6	0	6	1	2	0	0	0	0	108	10	0	15	75	0	0	223	2526
5:15 PM	8	0	17	0	0	0	1	0	0	114	12	0	10	50	1	0	213	2555
5:20 PM	4	0	21	0	0	0	0	0	0	111	8	0	23	97	0	0	264	2620
5:25 PM	5	0	17	0	0	0	1	0	0	141	15	0	9	75	1	0	264	2673
5:30 PM	7	0	19	0	0	0	1	0	0	104	13	0	11	83	0	0	238	2703
5:35 PM	7	0	19	0	0	0	0	0	0	118	12	0	14	69	0	0	239	2738
5:40 PM	6	0	23	0	0	0	1	0	1	97	4	0	9	97	1	0	239	2764
5:45 PM	9	0	13	0	0	0	1	0	0	104	15	0	13	71	0	0	226	2787
5:50 PM	3	0	17	1	0	0	0	0	0	114	13	0	12	60	0	0	220	2782
5:55 PM	9	0	18	0	0	0	0	0	0	119	14	0	10	61	0	0	231	2800
6:00 PM	8	0	15	0	0	0	0	0	0	95	12	0	10	50	0	0	190	2765
6:05 PM	5	0	16	0	0	0	1	0	1	115	9	0	8	63	0	0	218	2765
6:10 PM	6	0	18	0	0	0	0	0	0	74	16	0	12	49	0	0	175	2717
6:15 PM	7	0	20	0	0	0	0	0	0	87	11	0	7	57	0	0	189	2693
6:20 PM	5	0	11	0	0	0	0	0	0	97	19	0	5	52	0	0	189	2618
6:25 PM	4	0	18	0	0	0	0	0	0	96	11	0	11	35	0	0	175	2529

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	0	228	0	0	0	8	0	0	1424	144	0	172	1020	4	0	3064
Heavy Trucks	4	0	0		0	0	4		0	16	4		0	12	4		44
Pedestrians		8				0				0				28			36
Bicycles	0	0	0		0	0	0		0	2	1		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 8/1/2014 2:29 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Green Valley Rd. Interim Widening
Commercial Area — Element A
Contract # 72353

PHASE TIMING

LOCATION: Green Valley Road / Sophia Parkway

DATE: 7/18/2002

#6

PROGRAM: C7

F PAGE

		PHASE								
	INTERVAL	1	2	3	4	5	6	7	8	9
0	WALK		7						7	CLK RST
1	DON'T WALK		22						17	CHK SUM
2	MIN GREEN	4.	7			4	7	5	5	
3	TYPE 3 DET									
4	ADD/VEH		1.2				1.2			
5	PASSAGE	2.2	3.2			2.2	3.2	3.1	3.1	
6	MAX GAP		3.6				3.6			
7	MIN GAP		2.8				2.8			
8	MAX EXT	15	40			15	40	15	15	
9	MAX 2	12	30			12	60	15	20	YEAR
A	MAX 3	12	60			12	40	15	20	MONTH
B										DAY
C	REDUCE BY		0.1				0.1			DAY OF WEEK
D	REDUCE EVERY		1.0				1.0			HOUR
E	YELLOW	3.1	4.7			3.1	4.7	3.3	3.3	MINUTE
F	RED	0.5	1.0			0.5	1.0	0.5	0.5	SECOND

PRE-EMPTION	E
EV SELECT	
RR1 CLEAR	
EVA DELAY	
EVA CLEAR	5
EVB DELAY	
EVB CLEAR	5
EVC DELAY	
EVC CLEAR	5
EVD DELAY	
EVD CLEAR	5
MAX EV	50
RR2 CLEAR	

F									
FLAGS	1	2	3	4	5	6	7	8	
PERMIT	X	X			X	X	X	X	0
RED LOCK									1
YEL LOCK									2
V RECALL		X				X			3
P RECALL									4
PED PHASES		X						X	5
ARROW A									6
ARROW B									7
DBL ENTRY									8
MAX 2 PH	X	X			X	X	X	X	9
LAG PHASES	FOR OBSERVATION ONLY								A
RED REST									B
REST IN WALK									C
MAX 3 PH	X	X			X	X	X	X	D
YEL STARTUP								X	E
FIRST PHASE		X				X			F

FOE	MAX VAR INITIAL	
FC0	GAP SET	
FC1	MAX SET	
FC2		
FCA	OLA-GREEN	
FCB	OLB-GREEN	
FCC	OLC-GREEN	
FCD	OLD-GREEN	

F05	RED REVERT	3
FD0	TIME BASE SELECT	
FD3	PED SELECT	
FD4	7 - WIRE SELECT	
FD5	OFFSET SEEKING	
C05	FLASH TYPE	
F0C	LONG FAIL	
F0D	SHORT FAIL	

#6

Green Valley Rd. Interim Widening
Commercial Area — Element A
Contract # 72353

LOCATION: Green Valley Road / Sophia Parkway

PROGRAM: C7

DATE: 7/18/2002

KEY

TIME OF DAY ACTIVITY TABLE

7 • EVENT • HR • MIN • ACT • "E" • on/off • DOW LTS

	HR	MIN	ACT	on/off		M	T	W	T	F	S	S
				0		1	2	3	4	5	6	7
0	06	00	2	on		X	X	X	X	X		
1	10	00	2		OFF	X	X	X	X	X		
2	15	00	3	on		X	X	X	X	X		
3	19	00	3		OFF	X	X	X	X	X		
4												
5												
6												
7												
8												
9												
A												
B												
C												
D												
E												
F												

ACTIVITY CODES

1	TYPE OF SIMULTANEOUS PHASE TERMINATION
2	MAX 2
3	MAX 3
4	CONDITIONAL SERVICE (1st SELECT)
5	CONDITIONAL SERVICE (2nd SELECT)
6	ENERGIZE AUXILLARY OUTPUT - RED
7	ENERGIZE AUXILLARY OUTPUT - GREEN
8	ENERGIZE AUXILLARY OUTPUT - YELLOW
9	
A	TRAFFIC ACTUATED MAX 2 OPERATION
B	
C	YELLOW YIELD COORDINATION "C"
D	YELLOW YIELD COORDINATION "D"
E	
F	FLASHING OPERATION

Green Valley Rd. Interim Widening
Commercial Area — Element A
Contract # 72353

#6

LOCATION: Green Valley Road / Sophia Parkway

PROGRAM: C7

DATE: 7/18/2002

D PAGE

INPUT	ADDRESS	DELAY	OBSV DELAY	ADDRESS	CARRY	OBSV CARRY		INPUT	ADDRESS	DELAY	OBSV DELAY	ADDRESS	CARRY	OBSV CARRY
1I1	D-1-0		D-7-0	D-3-0		D-9-0	0	5J1	D-2-0		D-8-0	D-4-0		D-A-0
2I2U	D-1-1		D-7-1	D-3-1	2.1	D-9-1	1	6J2U	D-2-1		D-8-1	D-4-1	2.1	D-A-1
2I2L	D-1-2		D-7-2	D-3-2		D-9-2	2	6J2L	D-2-2		D-8-2	D-4-2		D-A-2
2I3U	D-1-3		D-7-3	D-3-3		D-9-3	3	6J3U	D-2-3		D-8-3	D-4-3		D-A-3
2I3L	D-1-4		D-7-4	D-3-4		D-9-4	4	6J3L	D-2-4		D-8-4	D-4-4		D-A-4
2I4	D-1-5		D-7-5	D-3-5		D-9-5	5	6J4	D-2-5		D-8-5	D-4-5		D-A-5
3I5	D-1-6		D-7-6	D-3-6		D-9-6	6	7J5	D-2-6	7.0	D-8-6	D-4-6		D-A-6
4I6U	D-1-7		D-7-7	D-3-7		D-9-7	7	8J6U	D-2-7	10.0	D-8-7	D-4-7		D-A-7
4I6L	D-1-8		D-7-8	D-3-8		D-9-8	8	8J6L	D-2-8		D-8-8	D-4-8	2.1	D-A-8
4I7U	D-1-9		D-7-9	D-3-9		D-9-9	9	8J7U	D-2-9		D-8-9	D-4-9		D-A-9
4I7L	D-1-A		D-7-A	D-3-A		D-9-A	A	8J7L	D-2-A	~~10~~	D-8-A	D-4-A		D-A-A
4I8	D-1-B		D-7-B	D-3-B		D-9-B	B	8J8	D-2-B		D-8-B	D-4-B		D-A-B
1I9U	D-1-C		D-7-C	D-3-C		D-9-C	C	5J9U	D-2-C		D-8-C	D-4-C		D-A-C
3I9L	D-1-D		D-7-D	D-3-D		D-9-D	D	7J9L	D-2-D		D-8-D	D-4-D		D-A-D

Assignable Detectors - (FCF)=123
Key Action = "E" + X Coord. + Y Coord. (See Shaded Areas)
Select Phase/Function Using Call Lights
EX. E-C-0 = 1 (FZ 1) E-D-0 =5,6 (Ext../Cnt. i.e. TYPE)
*5 = Ext..
6 = Cnt.
7 = Call
8 = Type 3

NOTE: Reset location F-C-F to zero after viewing or assigning detectors.

#6

Green Valley Rd. Interim Widening
Commercial Area — Element A
Contract # 72353

LOCATION: Green Valley Road \ Sophia Parkway

PROGRAM: C7

DATE: 7/18/2002

D PAGE (DOF = 123)
(DOF = 000 = Default Condition)

	B	FLAGS								[illegible]	FLAGS								F	FLAGS							
	RST	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	MAX	1	2	3	4	5	6	7	8
0	WLK									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2									CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																											
B																											
C																											
D																											
E										MER																	
F										BAT																	

E PAGE

	E	FLAGS								[illegible]	FLAGS								
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										"Y" RCL C									2
3										"Y" RCL D									3
4	Bike - A									Bike - B									4
5	OLA OUT									2 PED		X							5
6	OLB OUT									6 PED									6
7	OLC OUT									4 PED									7
8	OLD OUT									8 PED								X	8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F

#7

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

El Dorado County
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

File Name : 15-7246-002 El Dorado Hills Boulevard-Francisco Drive.ppc
Date : 3/24/2015

Unshifted Count = All Vehicles

AM PEAK HOUR	El Dorado Hills Boulevard Southbound					Francisco Drive Westbound					El Dorado Hills Boulevard Northbound					Francisco Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	12	68	0	0	80	5	11	6	0	22	83	21	8	0	112	1	5	123	0	129	343
08:15	23	69	0	0	92	16	10	11	0	37	99	39	10	0	148	1	4	139	0	144	421
08:30	65	52	1	0	118	20	18	24	0	62	78	35	23	0	136	0	12	95	0	107	423
08:45	8	47	2	0	57	30	24	22	0	76	79	30	9	0	118	0	5	104	0	109	360
Total Volume	108	236	3	0	347	71	63	63	0	197	339	125	50	0	514	2	26	461	0	489	1547
% App Total	31.1%	68.0%	0.9%	0.0%		36.0%	32.0%	32.0%	0.0%		66.0%	24.3%	9.7%	0.0%		0.4%	5.3%	94.3%	0.0%		
PHF	.415	.855	.375	.000	.735	.592	.656	.656	.000	.648	.856	.801	.543	.000	.868	.500	.542	.829	.000	.849	.914

PM PEAK HOUR	El Dorado Hills Boulevard Southbound					Francisco Drive Westbound					El Dorado Hills Boulevard Northbound					Francisco Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	9	41	1	0	51	7	10	7	0	24	113	65	4	0	182	1	16	109	0	126	383
16:45	4	44	1	0	49	5	6	3	0	14	123	59	7	0	189	0	14	116	0	130	382
17:00	4	33	0	0	37	10	14	12	0	36	114	74	16	0	204	1	8	128	0	137	414
17:15	10	36	1	0	47	5	7	13	0	25	126	59	10	0	195	0	10	141	0	151	418
Total Volume	27	154	3	0	184	27	37	35	0	99	476	257	37	0	770	2	48	494	0	544	1597
% App Total	14.7%	83.7%	1.6%	0.0%		27.3%	37.4%	35.4%	0.0%		61.8%	33.4%	4.8%	0.0%		0.4%	8.8%	90.8%	0.0%		
PHF	.675	.875	.750	.000	.902	.675	.661	.673	.000	.688	.944	.868	.578	.000	.944	.500	.750	.876	.000	.901	.955

All Traffic Data

(916) 771-8700

#8

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:30	6	123	0	129	23	0	5	28	0	29	4	33	0	0	0	0	190
06:45	35	162	0	197	28	0	7	35	0	49	30	79	0	0	0	0	311
Total	41	285	0	326	51	0	12	63	0	78	34	112	0	0	0	0	501
07:00	124	161	0	285	63	0	31	94	0	50	106	156	0	0	0	0	535
07:15	71	226	0	297	120	0	69	189	0	66	103	169	0	0	0	0	655
07:30	32	182	0	214	118	0	26	144	0	101	90	191	0	0	0	0	549
07:45	38	241	0	279	98	0	21	119	0	92	29	121	0	0	0	0	519
Total	265	810	0	1075	399	0	147	546	0	309	328	637	0	0	0	0	2258
08:00	34	171	0	205	51	0	34	85	0	96	28	124	0	0	0	0	414
08:15	68	166	0	234	63	0	52	115	0	86	67	153	0	0	0	0	502
08:30	17	183	0	200	44	0	41	85	0	116	16	132	0	0	0	0	417
08:45	30	225	0	255	30	0	15	45	0	79	12	91	0	0	0	0	391
Total	149	745	0	894	188	0	142	330	0	377	123	500	0	0	0	0	1724
09:00	10	136	0	146	31	0	10	41	0	78	8	86	0	0	0	0	273
09:15	4	135	0	139	15	0	4	19	0	94	9	103	0	0	0	0	261
Total	14	271	0	285	46	0	14	60	0	172	17	189	0	0	0	0	534
15:30	33	103	0	136	36	0	33	69	0	196	35	231	0	0	0	0	436
15:45	28	129	0	157	29	0	27	56	0	172	28	200	0	0	0	0	413
Total	61	232	0	293	65	0	60	125	0	368	63	431	0	0	0	0	849
16:00	25	131	0	156	27	0	34	61	0	176	44	220	0	0	0	0	437
16:15	40	117	0	157	31	0	33	64	0	214	27	241	0	0	0	0	462
16:30	38	112	0	150	17	0	29	46	0	209	32	241	0	0	0	0	437
16:45	43	137	0	180	32	0	43	75	0	198	45	243	0	0	0	0	498
Total	146	497	0	643	107	0	139	246	0	797	148	945	0	0	0	0	1834
17:00	35	127	0	162	38	0	29	67	0	225	49	274	0	0	0	0	503
17:15	37	128	0	165	34	0	25	59	0	208	43	251	0	0	0	0	475

All Traffic Data

(916) 771-8700

#8

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 2

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
17:30	31	141	0	172	27	0	34	61	0	213	53	266	0	0	0	0	499
17:45	59	143	0	202	42	0	37	79	0	198	39	237	0	0	0	0	518
Total	162	539	0	701	141	0	125	266	0	844	184	1028	0	0	0	0	1995
18:00	42	102	0	144	34	0	16	50	0	175	43	218	0	0	0	0	412
18:15	31	103	0	134	22	0	28	50	0	155	35	190	0	0	0	0	374
Grand Total	911	3584	0	4495	1053	0	683	1736	0	3275	975	4250	0	0	0	0	10481
Apprch %	20.3	79.7	0		60.7	0	39.3		0	77.1	22.9		0	0	0		
Total %	8.7	34.2	0	42.9	10	0	6.5	16.6	0	31.2	9.3	40.5	0	0	0	0	

	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 09:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	**124**	161	0	285	63	0	31	94	0	50	**106**	156	0	0	0	0	535
07:15	71	226	0	**297**	**120**	0	**69**	**189**	0	66	103	169	0	0	0	0	**655**
07:30	32	182	0	214	118	0	26	144	0	**101**	90	**191**	0	0	0	0	549
07:45	38	**241**	0	279	98	0	21	119	0	92	29	121	0	0	0	0	519
Total Volume	265	810	0	1075	399	0	147	546	0	309	328	637	0	0	0	0	2258
% App. Total	24.7	75.3	0		73.1	0	26.9		0	48.5	51.5		0	0	0		
PHF	.534	.840	.000	.905	.831	.000	.533	.722	.000	.765	.774	.834	.000	.000	.000	.000	.862

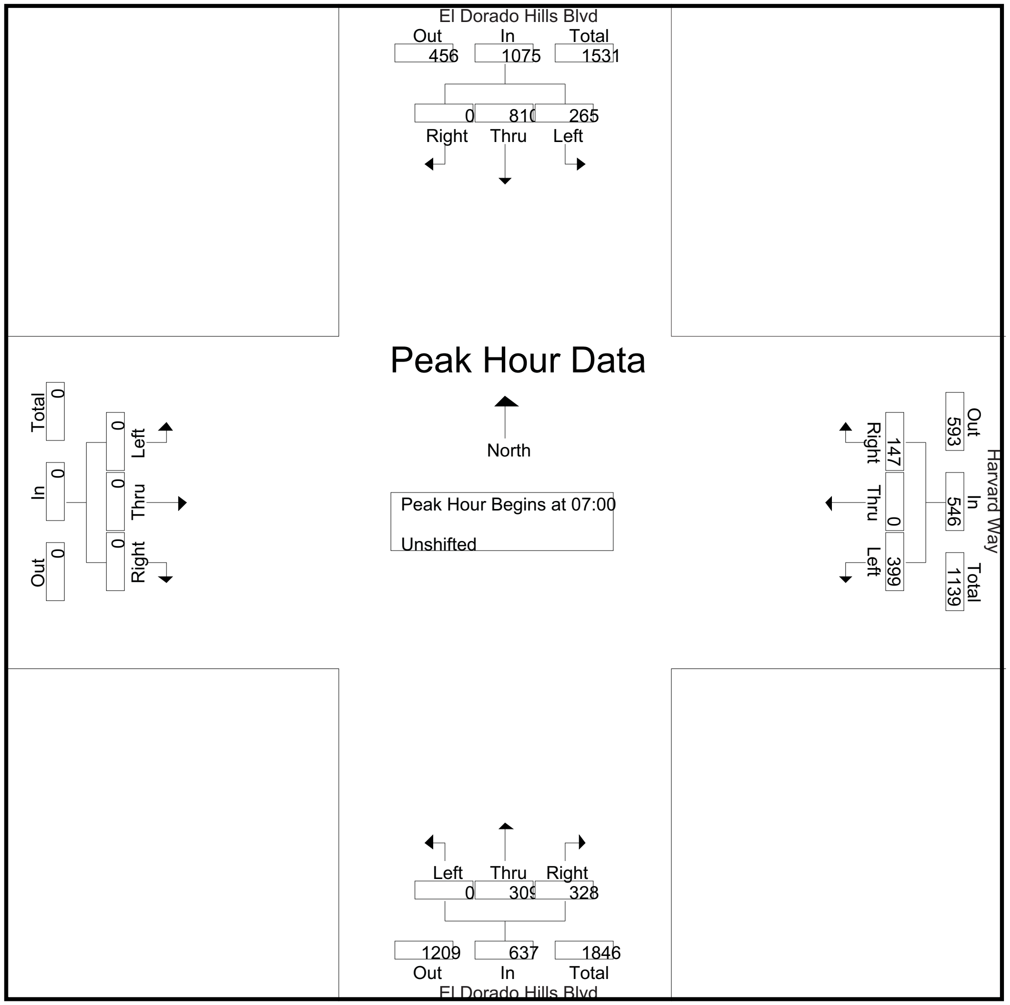
All Traffic Data

(916) 771-8700

#8

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 3



All Traffic Data

(916) 771-8700

#8

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 4

	El Dorado Hills Blvd Southbound				Harvard Way Westbound				El Dorado Hills Blvd Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 15:30 to 18:15 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	35	127	0	162	38	0	29	67	0	**225**	49	**274**	0	0	0	0	503
17:15	37	128	0	165	34	0	25	59	0	208	43	251	0	0	0	0	475
17:30	31	141	0	172	27	0	34	61	0	213	**53**	266	0	0	0	0	499
17:45	**59**	**143**	0	**202**	**42**	0	**37**	**79**	0	198	39	237	0	0	0	0	**518**
Total Volume	162	539	0	701	141	0	125	266	0	844	184	1028	0	0	0	0	1995
% App. Total	23.1	76.9	0		53	0	47		0	82.1	17.9		0	0	0		
PHF	.686	.942	.000	.868	.839	.000	.845	.842	.000	.938	.868	.938	.000	.000	.000	.000	.963

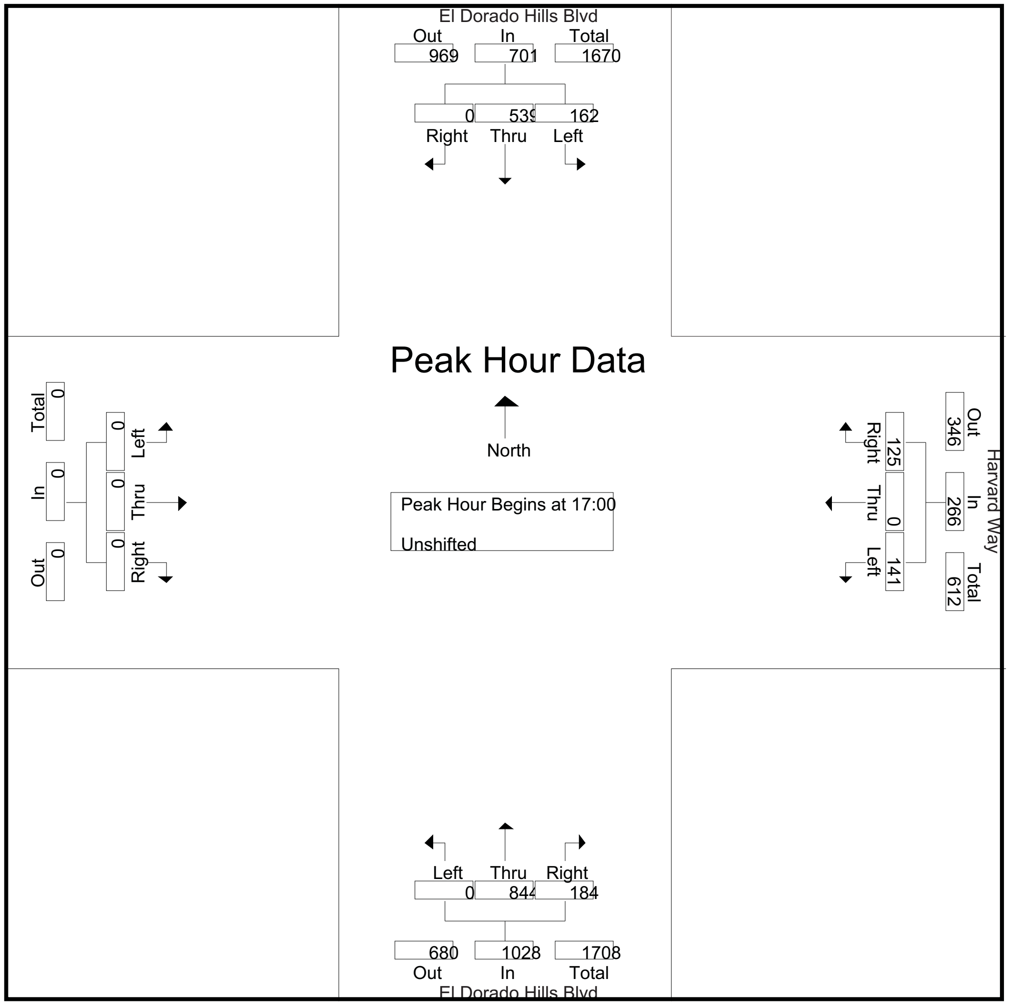
All Traffic Data

(916) 771-8700

#8

El Dorado County

File Name : 13-7063-011 El Dorado Hills-Harvard
Site Code : 00000000
Start Date : 1/29/2013
Page No : 5



#8

PHASE TIMING

LOCATION: El Dorado Hills Bl @ Harvard Wy

BY:

PROGRAM: C8

DATE: 5/24/2005

F PAGE

		PHASE								
	INTERVAL	1	2	3	4	5	6	7	8	9
0	WALK		6		6				6	CLK RST
1	DON'T WALK		17		12				10	CHK SUM
2	MIN GREEN	5	5		5		5			
3	TYPE 3 DET									
4	ADD/VEH		2.5				2.5			
5	PASSAGE	2.0	2.0		2.0		2.0			
6	MAX GAP		4.0		3.5		4.0			
7	MIN GAP		1.5		1.5		1.5			
8	MAX EXT	20	40		35		40			
9	MAX 2									YEAR
A	MAX 3									MONTH
B										DAY
C	REDUCE BY		0.1		0.1		0.1			DAY OF WK
D	REDUCE EVERY		1.0		1.0		1.0			HOUR
E	YELLOW	3.0	5.0		3.6		5.0			MINUTE
F	RED	1.0	1.0		1.0		1.0			SECOND
	PED XING - FT									

PRE-EMPTION	
	E
EV SELECT	
RR1 CLR	
EVA DLY	
EVA CLR	
EVB DLY	
EVB CLR	
EVC DLY	
EVC CLR	
EVD DLY	
EVD CLR	
MAX EV	
RR2 CLR	

F									
FLAGS	1	2	3	4	5	6	7	8	
PERMIT	X	X		X		X		X	0
RED LOCK	X			X					1
YEL LOCK		X				X			2
V RECALL		X				X			3
P RECALL									4
PED PHASES		X		X				X	5
ARROW A									6
ARROW B									7
DBL ENTRY									8
MAX 2 PH									9
LAG PHASES	FOR OBSERVATION ONLY								A
RED REST									B
REST IN WALK									C
MAX 3 PH									D
YEL STARTUP				X				X	E
FIRST PHASE		X				X			F

F0E	MAX VAR INITIAL	
FC0	GAP SET	
FC1	MAX SET	
FC2		
FCA	OLA-GREEN	
FCB	OLB-GREEN	
FCC	OLC-GREEN	
FCD	OLD-GREEN	

F0F	RED REVERT	
FD0	TIME BASE SELECT	
FD3	PED SELECT	
FD4	7 - WIRE SELECT	
FD8	OFFSET SEEKING	
C05	FLASH TYPE	
F0C	LONG FAIL	
F0D	SHORT FAIL	

#8

LOCATION: El Dorado Hills Bl @ Harvard Wy

PROGRAM: C8 **DATE:** 5/24/2005

D PAGE

INPUT	ADDRESS	DELAY	OBSV DELAY	ADDRESS	CARRY	OBSV CARRY		INPUT	ADDRESS	DELAY	OBSV DELAY	ADDRESS	CARRY	OBSV CARRY
1I1	D-1-0		D-7-0	D-3-0	1.0	D-9-0	0	5J1	D-2-0		D-8-0	D-4-0		D-A-0
2I2U	D-1-1		D-7-1	D-3-1	1.0	D-9-1	1	6J2U	D-2-1		D-8-1	D-4-1	1.0	D-A-1
2I2L	D-1-2		D-7-2	D-3-2	1.0	D-9-2	2	6J2L	D-2-2		D-8-2	D-4-2	1.0	D-A-2
2I3U	D-1-3		D-7-3	D-3-3		D-9-3	3	6J3U	D-2-3		D-8-3	D-4-3		D-A-3
2I3L	D-1-4		D-7-4	D-3-4	1.5	D-9-4	4	6J3L	D-2-4		D-8-4	D-4-4	1.5	D-A-4
2I4	D-1-5		D-7-5	D-3-5		D-9-5	5	6J4	D-2-5		D-8-5	D-4-5		D-A-5
3I5	D-1-6		D-7-6	D-3-6		D-9-6	6	7J5	D-2-6		D-8-6	D-4-6		D-A-6
4I6U	D-1-7		D-7-7	D-3-7	0.9	D-9-7	7	8J6U	D-2-7		D-8-7	D-4-7		D-A-7
4I6L	D-1-8	1.0	D-7-8	D-3-8		D-9-8	8	8J6L	D-2-8		D-8-8	D-4-8		D-A-8
4I7U	D-1-9	1.0	D-7-9	D-3-9	1.0	D-9-9	9	8J7U	D-2-9		D-8-9	D-4-9		D-A-9
4I7L	D-1-A	10.0	D-7-A	D-3-A		D-9-A	A	8J7L	D-2-A		D-8-A	D-4-A		D-A-A
4I8	D-1-B		D-7-B	D-3-B		D-9-B	B	8J8	D-2-B		D-8-B	D-4-B		D-A-B
1I9U	D-1-C		D-7-C	D-3-C		D-9-C	C	5J9U	D-2-C		D-8-C	D-4-C		D-A-C
3I9L	D-1-D		D-7-D	D-3-D		D-9-D	D	7J9L	D-2-D		D-8-D	D-4-D		D-A-D

Assignable Detectors - (FCF)=123
Key Action = "E" + X Coord. + Y Coord. (See Shaded Areas)
Select Phase/Function Using Call Lights
EX. E-C-0 = 1 (FZ 1) E-D-0 =5,6 (Ext../Cnt. i.e. TYPE)
*5 = Ext..
6 = Cnt.
7 = Call
8 = Type 3

NOTE: Reset location F-C-F to zero after viewing or assigning detectors.

#8

LOCATION: El Dorado Hills Bl @ Harvard Wy

PROGRAM: C8

DATE: 5/24/2005

D PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2									CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																											
B																											
C																											
D																											
E										VER.																	
F										BAT.																	

E PAGE

	E	FLAGS								F	FLAGS								
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										"Y" RCL C									2
3										"Y" RCL D									3
4	Bike - A									Bike - B									4
5	OLA OUT									2 PED		X							5
6	OLB OUT									6 PED									6
7	OLC OUT									4 PED				X					7
8	OLD OUT									8 PED								X	8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F

C8 VERSION NUMBER = D-E-E

CONTROL CODE "D" SYSTEM DETECTOR	
	0
0	
1	
2	
3	
4	
5	
6	
7	
8	

NOTE: IF THIS IS THE MASTER FOR SYSTEM, ENTER NO. OF SLAVES IN RAM LOCATION D-0-0

CONTROL CODE "D"				
		A	B	C
LAST PWR FAIL	E	H	M	D
LAST FLASH	F	H	M	D

All Traffic Data

(916) 771-8700

#9

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 1

Groups Printed- Unshifted

	El Dorado Hills Blvd Southbound					Westbound				El Dorado Hills Blvd Northbound					Olson Lane Eastbound							
Start Time	Left	Thr	Rig	Ped	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00	0	225	7	0	232	0	0	0	0	7	141	0	0	148	36	0	29	0	65	0	445	445
07:15	0	264	10	0	274	0	0	0	0	4	149	0	0	153	22	0	52	0	74	0	501	501
07:30	0	333	10	0	343	0	0	0	0	5	139	0	0	144	19	0	49	0	68	0	555	555
07:45	0	335	9	0	344	0	0	0	0	18	131	0	1	149	7	0	32	0	39	1	532	533
Total	0	1157	36	0	1193	0	0	0	0	34	560	0	1	594	84	0	162	0	246	1	2033	2034
08:00	0	245	6	0	251	0	0	0	0	17	139	0	3	156	12	0	28	0	40	3	447	450
08:15	0	238	15	0	253	0	0	0	0	16	144	0	1	160	9	0	31	0	40	1	453	454
08:30	0	193	15	0	208	0	0	0	0	20	113	0	4	133	10	0	37	0	47	4	388	392
08:45	0	209	6	0	215	0	0	0	0	14	133	0	2	147	5	0	33	0	38	2	400	402
Total	0	885	42	0	927	0	0	0	0	67	529	0	10	596	36	0	129	0	165	10	1688	1698
16:00	0	125	2	0	127	0	0	0	0	30	176	0	0	206	5	0	19	0	24	0	357	357
16:15	0	162	8	0	170	0	0	0	0	29	240	0	0	269	6	0	20	0	26	0	465	465
16:30	0	161	5	0	166	0	0	0	0	44	238	0	1	282	5	0	14	0	19	1	467	468
16:45	0	157	4	0	161	0	0	0	0	47	237	0	1	284	8	0	17	0	25	1	470	471
Total	0	605	19	0	624	0	0	0	0	150	891	0	2	1041	24	0	70	0	94	2	1759	1761
17:00	0	153	4	0	157	0	0	0	0	39	257	0	0	296	8	0	21	0	29	0	482	482
17:15	0	175	5	0	180	0	0	0	0	40	282	0	0	322	7	0	21	0	28	0	530	530
17:30	0	131	8	0	139	0	0	0	0	36	267	0	0	303	8	0	17	0	25	0	467	467
17:45	0	170	7	0	177	0	0	0	0	36	211	0	1	247	6	0	23	0	29	1	453	454
Total	0	629	24	0	653	0	0	0	0	151	1017	0	1	1168	29	0	82	0	111	1	1932	1933
Grand Total	0	3276	121	0	3397	0	0	0	0	402	2997	0	14	3399	173	0	443	0	616	14	7412	7426
Apprch %	0	96.4	3.6			0	0	0		11.8	88.2	0			28.1	0	71.9					
Total %	0	44.2	1.6		45.8	0	0	0	0	5.4	40.4	0		45.9	2.3	0	6		8.3	0.2	99.8	

#9

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 2

	El Dorado Hills Blvd Southbound				Westbound				El Dorado Hills Blvd Northbound				Olson Lane Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	264	**10**	274	0	0	0	0	4	**149**	0	153	**22**	0	**52**	**74**	501
07:30	0	333	10	343	0	0	0	0	5	139	0	144	19	0	49	68	**555**
07:45	0	**335**	9	**344**	0	0	0	0	**18**	131	0	149	7	0	32	39	532
08:00	0	245	6	251	0	0	0	0	17	139	0	**156**	12	0	28	40	447
Total Volume	0	1177	35	1212	0	0	0	0	44	558	0	602	60	0	161	221	2035
% App. Total	0	97.1	2.9		0	0	0		7.3	92.7	0		27.1	0	72.9		
PHF	.000	.878	.875	.881	.000	.000	.000	.000	.611	.936	.000	.965	.682	.000	.774	.747	.917

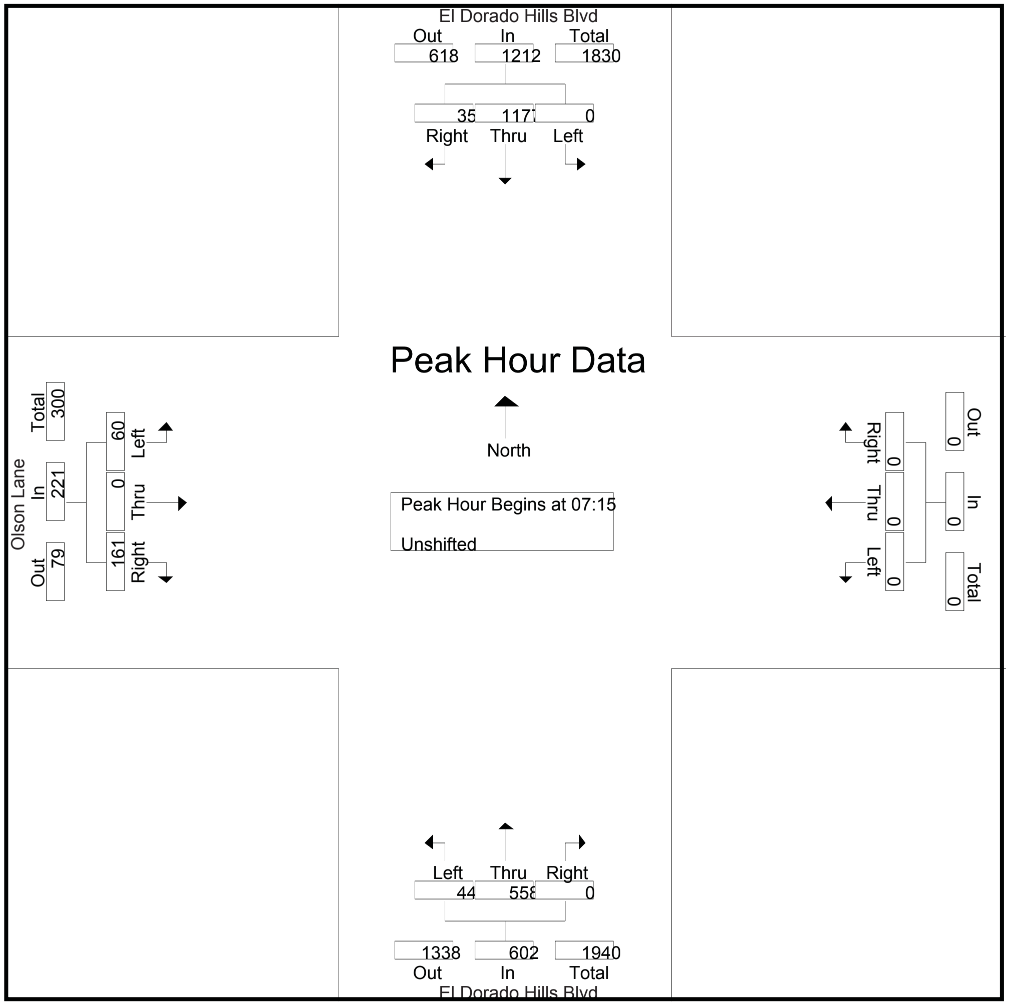
All Traffic Data

(916) 771-8700

#9

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 3



All Traffic Data

(916) 771-8700

#9

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 4

	El Dorado Hills Blvd Southbound				Westbound				El Dorado Hills Blvd Northbound				Olson Lane Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	0	161	**5**	166	0	0	0	0	44	238	0	282	5	0	14	19	467
16:45	0	157	4	161	0	0	0	0	**47**	237	0	284	**8**	0	17	25	470
17:00	0	153	4	157	0	0	0	0	39	257	0	296	8	0	**21**	**29**	482
17:15	0	**175**	5	**180**	0	0	0	0	40	**282**	0	**322**	7	0	21	28	**530**
Total Volume	0	646	18	664	0	0	0	0	170	1014	0	1184	28	0	73	101	1949
% App. Total	0	97.3	2.7		0	0	0		14.4	85.6	0		27.7	0	72.3		
PHF	.000	.923	.900	.922	.000	.000	.000	.000	.904	.899	.000	.919	.875	.000	.869	.871	.919

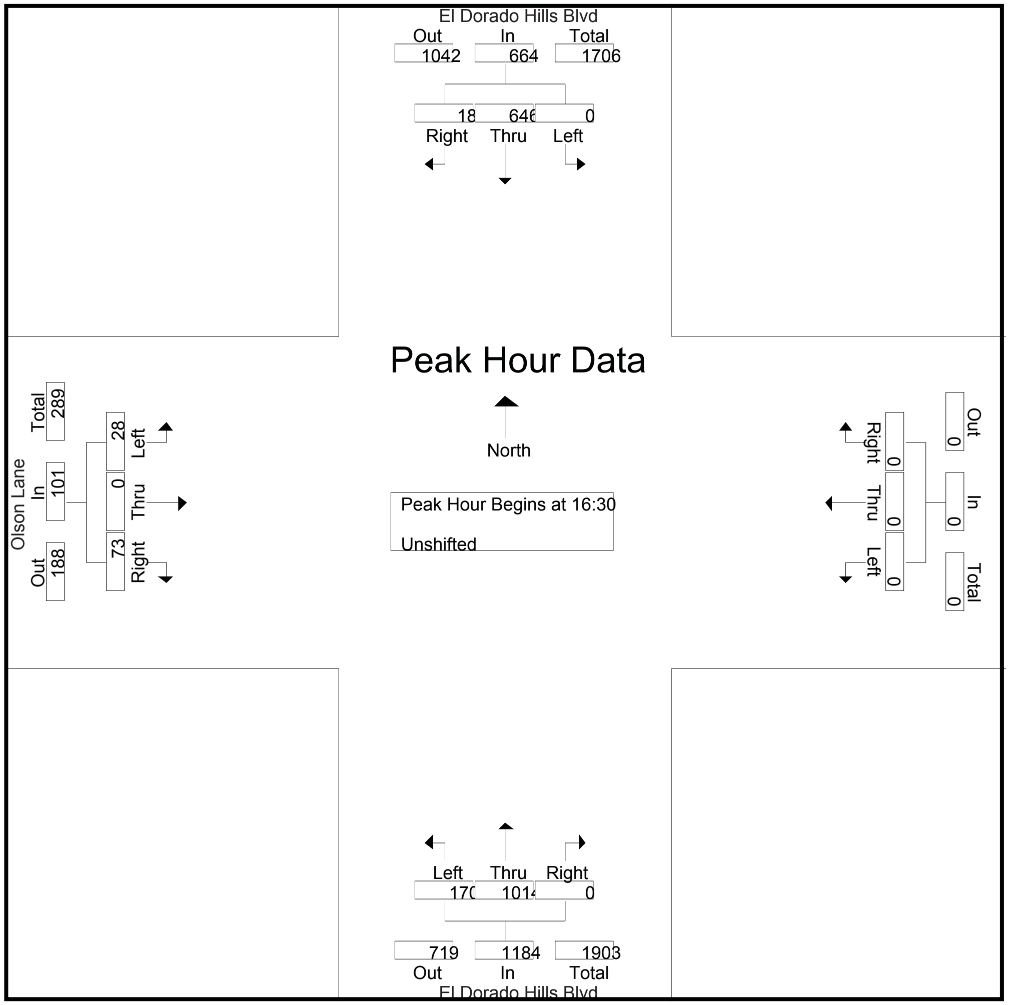
All Traffic Data

(916) 771-8700

#9

City of El Dorado Hills
Bicycles on Bank 1
Heavy Vehicles on Bank 2

File Name : 12-7225-001 El Dorado Hills-Olson
Site Code : 00000000
Start Date : 5/22/2012
Page No : 5



LOCATION: El Dorado Hills Bl/Olson Ln **BY:** Natalie Porter

#9

PROGRAM: C8 V.4 **DATE:** 7/30/2004

F PAGE

	INTERVAL	PHASE 1	2	3	4	5	6	7	8	9
0	WALK				7		7			CLK RST
1	DON'T WALK				23		17			CHK SUM
2	MIN GREEN		7		5	4	7			
3	TYPE 3 DET									
4	ADD/VEH		1.2				1.2			
5	PASSAGE		3.2		3.1	2.2	3.2			
6	MAX GAP		3.6				3.6			
7	MIN GAP		2.8				2.8			
8	MAX EXT		45		20	25	45			
9	MAX 2									YEAR
A	MAX 3									MONTH
B										DAY
C	REDUCE BY		0.1				0.1			DAY OF WEEK
D	REDUCE EVERY		1				1			HOUR
E	YELLOW		4.7		3.3	3.1	4.7			MINUTE
F	RED		1		0.5	0.5	1			SECOND

PRE-EMPTION	E
EV SELECT	
RR1 CLEAR	
EVA DELAY	0
EVA CLEAR	5
EVB DELAY	0
EVB CLEAR	5
EVC DELAY	0
EVC CLEAR	5
EVD DELAY	0
EVD CLEAR	5
MAX EV	30
RR2 CLEAR	

F FLAGS	1	2	3	4	5	6	7	8	
PERMIT		X		X	X	X			0
RED LOCK				X					1
YEL LOCK				X					2
V RECALL		X				X			3
P RECALL									4
PED PHASES				X		X			5
ARROW A									6
ARROW B									7
DBL ENTRY									8
MAX 2 PH									9
LAG PHASES	FOR OBSERVATION ONLY								A
RED REST									B
REST IN WALK									C
MAX 3 PH									D
YEL STARTUP				X					E
FIRST PHASE		X				X			F

F0E	MAX VAR INITIAL	
FC0	GAP SET	
FC1	MAX SET	
FC2		
FCA	OLA-GREEN	
FCB	OLB-GREEN	
FCC	OLC-GREEN	
FCD	OLD-GREEN	

F0F	RED REVERT	3
FD0	TIME BASE SELECT	
FD3	PED SELECT	
FD4	7 - WIRE SELECT	
FD8	OFFSET SEEKING	
C05	FLASH TYPE	
F0C	LONG FAIL	
F0D	SHORT FAIL	

#9

LOCATION: El Dorado Hills Bl/Olson Ln

PROGRAM: C8 V.4

BY: Natalie Porter

DATE: 7/30/2004

D PAGE

	D	FLAGS								E	FLAGS								F	FLAGS							
	MAX	1	2	3	4	5	6	7	8	MIN	1	2	3	4	5	6	7	8	PED	1	2	3	4	5	6	7	8
0	RCL									RCL									RCL								
1	CP 1									CP 1									CP 1								
2	CP 2									CP 2									CP 2								
3	CP 3									CP 3									CP 3								
4	CP 4									CP 4									CP 4								
5	CP 5									CP 5									CP 5								
6	CP 6									CP 6									CP 6								
7	CP 7									CP 7									CP 7								
8	CP 8									CP 8									CP 8								
9	CP 9									CP 9									CP 9								
A																											
B																											
C																											
D																											
E										VER.																	
F										BAT.																	

E PAGE

	E	FLAGS								F	FLAGS								
	FUNCTION	1	2	3	4	5	6	7	8	FUNCTION	1	2	3	4	5	6	7	8	
0										CODE 4									0
1										CODE 5									1
2										"Y" RCL C									2
3										"Y" RCL D									3
4	Bike - A									Bike - B									4
5	OLA OUT									2 PED									5
6	OLB OUT									6 PED						X			6
7	OLC OUT									4 PED				X					7
8	OLD OUT									8 PED									8
9																			9
A	OLA NOT									OLA ON									A
B	OLB NOT									OLB ON									B
C	OLC NOT									OLC ON									C
D	OLD NOT									OLD ON									D
E																			E
F																			F

NOTE: IF THIS IS THE MASTER FOR SYSTEM, ENTER NO. OF SLAVES IN RAM LOCATION D-0-0

CONTROL CODE "D" SYSTEM DETECTOR

	0
0	
1	
2	
3	
4	
5	
6	
7	
8	

C8 VERSION NUMBER = D-E-E

CONTROL CODE "D"

		A	B	C
LAST PWR FAIL	E	H	M	D
LAST FLASH	F	H	M	D

#9

LOCATION: El Dorado Hills Bl/Olson Ln **By:** Natalie Porter

PROGRAM: C8 V.4 **DATE:** 7/30/2004

D PAGE

INPUT	ADDRESS	DELAY	OBSV DELAY	ADDRESS	CARRY	OBSV CARRY		INPUT	ADDRESS	DELAY	OBSV DELAY	ADDRESS	CARRY	OBSV CARRY
1I1	D-1-0		D-7-0	D-3-0		D-9-0	0	5J1	D-2-0		D-8-0	D-4-0		D-A-0
2I2U	D-1-1		D-7-1	D-3-1		D-9-1	1	6J2U	D-2-1		D-8-1	D-4-1		D-A-1
2I2L	D-1-2		D-7-2	D-3-2		D-9-2	2	6J2L	D-2-2		D-8-2	D-4-2		D-A-2
2I3U	D-1-3		D-7-3	D-3-3		D-9-3	3	6J3U	D-2-3		D-8-3	D-4-3		D-A-3
2I3L	D-1-4		D-7-4	D-3-4		D-9-4	4	6J3L	D-2-4		D-8-4	D-4-4		D-A-4
2I4	D-1-5		D-7-5	D-3-5		D-9-5	5	6J4	D-2-5		D-8-5	D-4-5		D-A-5
3I5	D-1-6		D-7-6	D-3-6		D-9-6	6	7J5	D-2-6		D-8-6	D-4-6		D-A-6
4I6U	D-1-7		D-7-7	D-3-7		D-9-7	7	8J6U	D-2-7		D-8-7	D-4-7		D-A-7
4I6L	D-1-8		D-7-8	D-3-8		D-9-8	8	8J6L	D-2-8		D-8-8	D-4-8		D-A-8
4I7U	D-1-9		D-7-9	D-3-9		D-9-9	9	8J7U	D-2-9		D-8-9	D-4-9		D-A-9
4I7L	D-1-A	15.0	D-7-A	D-3-A		D-9-A	A	8J7L	D-2-A		D-8-A	D-4-A		D-A-A
4I8	D-1-B	3.0	D-7-B	D-3-B		D-9-B	B	8J8	D-2-B		D-8-B	D-4-B		D-A-B
1I9U	D-1-C		D-7-C	D-3-C		D-9-C	C	5J9U	D-2-C		D-8-C	D-4-C		D-A-C
3I9L	D-1-D		D-7-D	D-3-D		D-9-D	D	7J9L	D-2-D		D-8-D	D-4-D		D-A-D

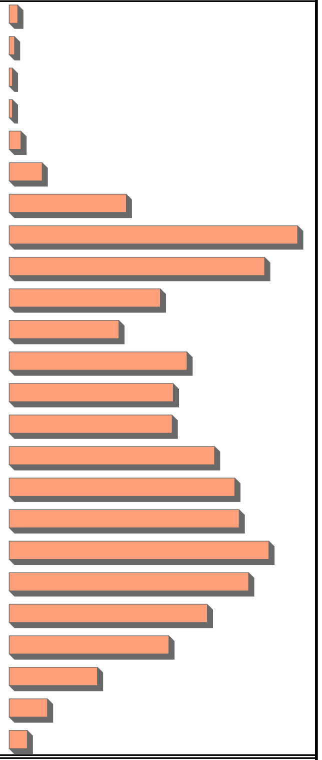
Assignable Detectors - (FCF)=123
Key Action = "E" + X Coord. + Y Coord. (See Shaded Areas)
Select Phase/Function Using Call Lights
EX. E-C-0 = 1 (FZ 1) E-D-0 =5,6 (Ext../Cnt. i.e. TYPE)
*5 = Ext..
6 = Cnt.
7 = Call
8 = Type 3

NOTE: Reset location F-C-F to zero after viewing or assigning detectors.

LOCATION: Olson Ln btwn Gillette Dr & El Dorado Hills Blvd
SPECIFIC LOCATION: Olson Ln btwn Gillette Dr & El Dorado Hills Blvd
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566905
DIRECTION: NB/SB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	Mon	Tue 25-Aug-15	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		8				8			8	
1:00 AM		5				5			5	
2:00 AM		3				3			3	
3:00 AM		3				3			3	
4:00 AM		11				11			11	
5:00 AM		31				31			31	
6:00 AM		110				110			110	
7:00 AM		**271**				**271**			**271**	
8:00 AM		240				240			240	
9:00 AM		142				142			142	
10:00 AM		103				103			103	
11:00 AM		167				167			167	
12:00 PM		154				154			154	
1:00 PM		153				153			153	
2:00 PM		193				193			193	
3:00 PM		212				212			212	
4:00 PM		216				216			216	
5:00 PM		**244**				**244**			**244**	
6:00 PM		225				225			225	
7:00 PM		186				186			186	
8:00 PM		150				150			150	
9:00 PM		83				83			83	
10:00 PM		36				36			36	
11:00 PM		17				17			17	
Day Total		2963				2963			2963	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		7:00 AM 271				7:00 AM 271			7:00 AM 271	
PM Peak Volume		5:00 PM 244				5:00 PM 244			5:00 PM 244	



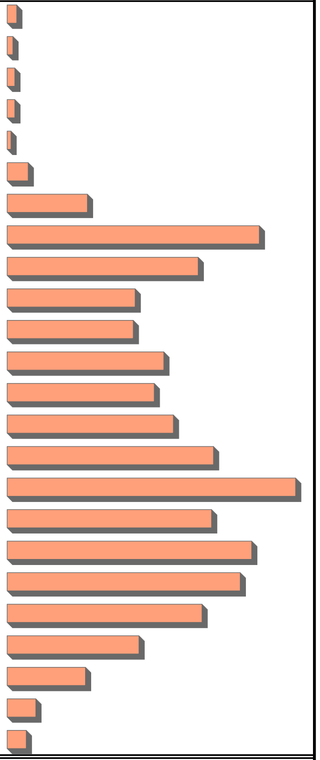
Comments:

Type of report: Tube Count - Volume Data

LOCATION: Ridgeview Dr S of Gillette Dr
SPECIFIC LOCATION: Ridgeview Dr S of Gillette Dr
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566906
DIRECTION: NB/SB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	Mon	Tue 25-Aug-15	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		5				5			5	
1:00 AM		3				3			3	
2:00 AM		4				4			4	
3:00 AM		4				4			4	
4:00 AM		2				2			2	
5:00 AM		11				11			11	
6:00 AM		42				42			42	
7:00 AM		**132**				**132**			**132**	
8:00 AM		100				100			100	
9:00 AM		67				67			67	
10:00 AM		66				66			66	
11:00 AM		82				82			82	
12:00 PM		77				77			77	
1:00 PM		87				87			87	
2:00 PM		108				108			108	
3:00 PM		**151**				**151**			**151**	
4:00 PM		107				107			107	
5:00 PM		128				128			128	
6:00 PM		122				122			122	
7:00 PM		102				102			102	
8:00 PM		69				69			69	
9:00 PM		41				41			41	
10:00 PM		15				15			15	
11:00 PM		10				10			10	
Day Total		1535				1535			1535	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		7:00 AM 132				7:00 AM 132			7:00 AM 132	
PM Peak Volume		3:00 PM 151				3:00 PM 151			3:00 PM 151	



Comments:

Report generated on 8/31/2015 1:19 PM

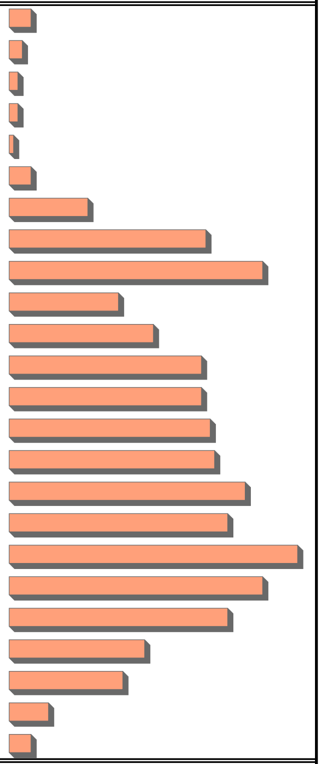
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Powers Dr S of Mossridge Way
SPECIFIC LOCATION: Powers Dr S of Mossridge Way
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566907
DIRECTION: NB/SB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	**Mon**	**Tue** 25-Aug-15	**Wed**	**Thu**	**Fri**	**Average Weekday Hourly Traffic**	**Sat**	**Sun**	**Average Week Hourly Traffic**	**Average Week Profile**
12:00 AM		5				5			5	
1:00 AM		3				3			3	
2:00 AM		2				2			2	
3:00 AM		2				2			2	
4:00 AM		1				1			1	
5:00 AM		5				5			5	
6:00 AM		18				18			18	
7:00 AM		45				45			45	
8:00 AM		**58**				**58**			**58**	
9:00 AM		25				25			25	
10:00 AM		33				33			33	
11:00 AM		44				44			44	
12:00 PM		44				44			44	
1:00 PM		46				46			46	
2:00 PM		47				47			47	
3:00 PM		54				54			54	
4:00 PM		50				50			50	
5:00 PM		**66**				**66**			**66**	
6:00 PM		58				58			58	
7:00 PM		50				50			50	
8:00 PM		31				31			31	
9:00 PM		26				26			26	
10:00 PM		9				9			9	
11:00 PM		5				5			5	
Day Total		727				727			727	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		8:00 AM 58				8:00 AM 58			8:00 AM 58	
PM Peak Volume		5:00 PM 66				5:00 PM 66			5:00 PM 66	



Comments:

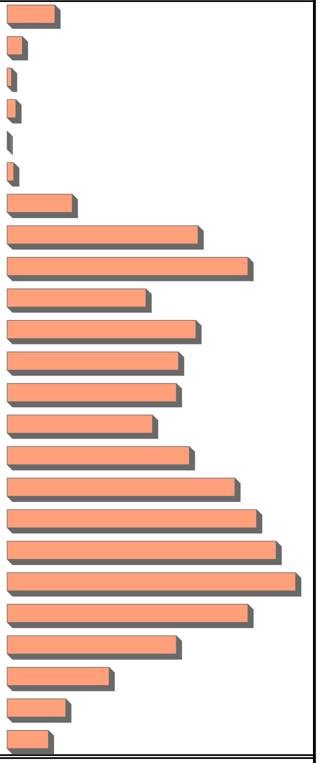
Report generated on 8/31/2015 1:19 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Beatty Dr S of Alexandra Dr
SPECIFIC LOCATION: Beatty Dr S of Alexandra Dr
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566908
DIRECTION: NB/SB
DATE: Sep 02 2015 - Sep 02 2015

Start Time	Mon	Tue	Wed 02-Sep-15	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			22			22			22	
1:00 AM			7			7			7	
2:00 AM			2			2			2	
3:00 AM			4			4			4	
4:00 AM			0			0			0	
5:00 AM			3			3			3	
6:00 AM			30			30			30	
7:00 AM			88			88			88	
8:00 AM			**111**			**111**			**111**	
9:00 AM			64			64			64	
10:00 AM			87			87			87	
11:00 AM			79			79			79	
12:00 PM			78			78			78	
1:00 PM			67			67			67	
2:00 PM			84			84			84	
3:00 PM			105			105			105	
4:00 PM			115			115			115	
5:00 PM			124			124			124	
6:00 PM			**133**			**133**			**133**	
7:00 PM			111			111			111	
8:00 PM			78			78			78	
9:00 PM			47			47			47	
10:00 PM			27			27			27	
11:00 PM			19			19			19	
Day Total			1485			1485			1485	
% Weekday Average			100.0%							
% Week Average			100.0%			100.0%				
AM Peak Volume			8:00 AM 111			8:00 AM 111			8:00 AM 111	
PM Peak Volume			6:00 PM 133			6:00 PM 133			6:00 PM 133	

Comments:

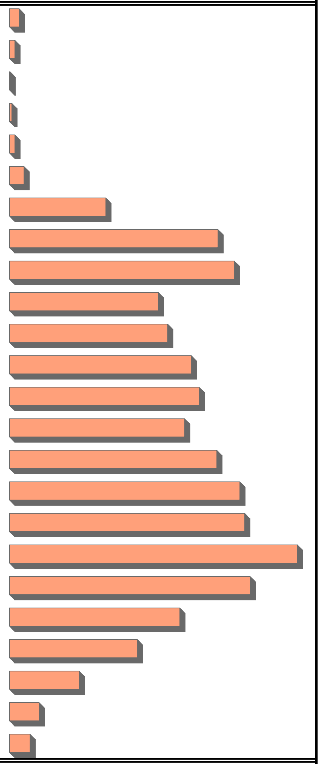
Report generated on 9/7/2015 10:54 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: Sophia Pkwy S of Alexandra Dr
SPECIFIC LOCATION: Sophia Pkwy S of Alexandra Dr
CITY/STATE: Folsom, CA

QC JOB #: 13566909
DIRECTION: NB/SB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	Mon	Tue 25-Aug-15	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		16				16			16	
1:00 AM		9				9			9	
2:00 AM		1				1			1	
3:00 AM		4				4			4	
4:00 AM		9				9			9	
5:00 AM		24				24			24	
6:00 AM		159				159			159	
7:00 AM		344				344			344	
8:00 AM		**371**				**371**			**371**	
9:00 AM		246				246			246	
10:00 AM		261				261			261	
11:00 AM		300				300			300	
12:00 PM		313				313			313	
1:00 PM		289				289			289	
2:00 PM		342				342			342	
3:00 PM		380				380			380	
4:00 PM		388				388			388	
5:00 PM		**475**				**475**			**475**	
6:00 PM		397				397			397	
7:00 PM		281				281			281	
8:00 PM		211				211			211	
9:00 PM		115				115			115	
10:00 PM		49				49			49	
11:00 PM		34				34			34	
Day Total		5018				5018			5018	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		8:00 AM 371				8:00 AM 371			8:00 AM 371	
PM Peak Volume		5:00 PM 475				5:00 PM 475			5:00 PM 475	

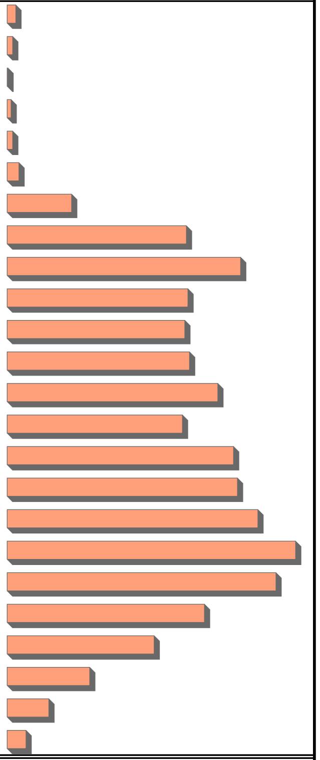


Comments:

LOCATION: Sophia Pkwy N of Alexandra Dr
SPECIFIC LOCATION: Sophia Pkwy N of Alexandra Dr
CITY/STATE: El Dorado Hills, CA

QC JOB #: 13566910
DIRECTION: NB/SB
DATE: Aug 25 2015 - Aug 25 2015

Start Time	Mon	Tue 25-Aug-15	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		11				11			11	
1:00 AM		7				7			7	
2:00 AM		1				1			1	
3:00 AM		5				5			5	
4:00 AM		7				7			7	
5:00 AM		15				15			15	
6:00 AM		82				82			82	
7:00 AM		228				228			228	
8:00 AM		**297**				**297**			**297**	
9:00 AM		230				230			230	
10:00 AM		226				226			226	
11:00 AM		232				232			232	
12:00 PM		268				268			268	
1:00 PM		223				223			223	
2:00 PM		288				288			288	
3:00 PM		293				293			293	
4:00 PM		319				319			319	
5:00 PM		**367**				**367**			**367**	
6:00 PM		342				342			342	
7:00 PM		251				251			251	
8:00 PM		187				187			187	
9:00 PM		105				105			105	
10:00 PM		53				53			53	
11:00 PM		24				24			24	
Day Total		4061				4061			4061	
% Weekday Average		100.0%								
% Week Average		100.0%				100.0%				
AM Peak Volume		8:00 AM 297				8:00 AM 297			8:00 AM 297	
PM Peak Volume		5:00 PM 367				5:00 PM 367			5:00 PM 367	



Comments:

Report generated on 8/31/2015 1:19 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Appendix B

Synchro Calculation Sheets

Promontory Village 7 Traffic Impact Study:

Existing (2015) AM Peak-hour

Calculation Sheets

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	98	0	0	273
Future Vol, veh/h	0	0	98	0	0	273
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	114	0	0	290

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	409	124	0	0	119	0
Stage 1	119	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	597	924	-	-	1463	-
Stage 1	904	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	591	915	-	-	1456	-
Mov Cap-2 Maneuver	591	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1456	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	98	9	66	24	6	217
Future Vol, veh/h	98	9	66	24	6	217
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	118	11	77	28	6	231

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	340	101	0	0	110	0
Stage 1	96	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	654	952	-	-	1474	-
Stage 1	925	-	-	-	-	-
Stage 2	794	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	645	943	-	-	1467	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	645	943	1467	-
HCM Lane V/C Ratio	-	-	0.183	0.011	0.004	-
HCM Control Delay (s)	-	-	11.8	8.9	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	0	-

HCM 2010 TWSC
3: Driveway B/Palermo Dr & Alexandra Dr

10/22/2015

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	9	21	0	0	80	5	0	0	0	5	0	27
Future Vol, veh/h	9	21	0	0	80	5	0	0	0	5	0	27
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	25	0	0	96	6	0	0	0	6	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	30	0	0	174	159	35	156	156	109
Stage 1	-	-	-	-	-	-	52	52	-	104	104	-
Stage 2	-	-	-	-	-	-	122	107	-	52	52	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1478	-	-	1576	-	-	787	731	1035	808	734	942
Stage 1	-	-	-	-	-	-	958	850	-	899	807	-
Stage 2	-	-	-	-	-	-	880	805	-	958	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1471	-	-	1568	-	-	746	719	1025	796	722	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	746	719	-	796	722	-
Stage 1	-	-	-	-	-	-	946	840	-	888	803	-
Stage 2	-	-	-	-	-	-	843	801	-	946	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	0	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1471	-	-	1568	-	-	909
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.045
HCM Control Delay (s)	0	7.5	-	-	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	0	83	28	0
Future Vol, veh/h	0	0	0	83	28	0
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	69	69	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	0	120	32	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	157	42	37	0	-	0
Stage 1	37	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	832	1026	1567	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	824	1016	1560	-	-	-
Mov Cap-2 Maneuver	824	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	899	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1560	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	14	0	0	91	0
Future Vol, veh/h	0	0	0	0	0	0	0	14	0	0	91	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	1.00	1.00	1.00	0.92	0.69	0.69	0.69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	0	0	0	0	14	0	0	132	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	0	6.8	7.7
HCM LOS	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	21%
Vol Thru, %	100%	100%	0%	79%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	0	14	28
LT Vol	0	0	0	6
Through Vol	91	0	0	22
RT Vol	0	0	14	0
Lane Flow Rate	132	0	14	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0	0.014	0.036
Departure Headway (Hd)	3.998	4.244	3.631	4.116
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	899	0	973	869
Service Time	2.009	2.317	1.701	2.144
HCM Lane V/C Ratio	0.147	0	0.014	0.037
HCM Control Delay	7.7	7.3	6.8	7.3
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.5	0	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	6	22	0
Future Vol, veh/h	0	6	22	0
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	7	25	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.3
HCM LOS	A

Lane

	↗	→	↘	↙	←	↖	↑	↗	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	7	619	36	178	1680	82	83	96	4
v/c Ratio	0.04	0.44	0.05	0.59	0.78	0.29	0.29	0.28	0.01
Control Delay	31.0	16.0	0.2	34.6	15.9	24.2	24.2	4.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	16.0	0.2	34.6	15.9	24.2	24.2	4.7	0.0
Queue Length 50th (ft)	2	70	0	49	135	24	24	0	0
Queue Length 95th (ft)	16	192	0	#158	#593	61	62	9	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	357	2154	988	357	2154	383	385	419	520
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	0.04	0.50	0.78	0.21	0.22	0.23	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (vph)	6	551	32	141	1327	0	122	3	73	0	0	2
Future Volume (vph)	6	551	32	141	1327	0	122	3	73	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.6	5.7	5.7	3.6	5.7		3.8	3.8	3.8		3.8	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00		1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98		0.89	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		0.86	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00	
Satd. Flow (prot)	1727	3505	1544	1752	3505		1665	1673	1389		1425	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		1.00	
Satd. Flow (perm)	1727	3505	1544	1752	3505		1665	1673	1389		1425	
Peak-hour factor, PHF	0.89	0.89	0.89	0.79	0.79	0.79	0.76	0.76	0.76	0.50	0.50	0.50
Adj. Flow (vph)	7	619	36	178	1680	0	161	4	96	0	0	4
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	81	0	4	0
Lane Group Flow (vph)	7	619	15	178	1680	0	82	83	15	0	0	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Parking (#/hr)									0			
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm		NA	
Protected Phases	5	2		1	6		8	8			4	
Permitted Phases			2						8	4		
Actuated Green, G (s)	0.8	26.6	26.6	10.1	35.9		10.0	10.0	10.0		0.8	
Effective Green, g (s)	0.8	26.6	26.6	10.1	35.9		10.0	10.0	10.0		0.8	
Actuated g/C Ratio	0.01	0.41	0.41	0.16	0.56		0.16	0.16	0.16		0.01	
Clearance Time (s)	3.6	5.7	5.7	3.6	5.7		3.8	3.8	3.8		3.8	
Vehicle Extension (s)	2.2	3.6	3.6	2.2	3.6		3.1	3.1	3.1		3.1	
Lane Grp Cap (vph)	21	1447	637	274	1953		258	259	215		17	
v/s Ratio Prot	0.00	0.18		c0.10	c0.48		0.05	c0.05			c0.00	
v/s Ratio Perm			0.01						0.01			
v/c Ratio	0.33	0.43	0.02	0.65	0.86		0.32	0.32	0.07		0.00	
Uniform Delay, d1	31.5	13.5	11.2	25.5	12.1		24.2	24.2	23.2		31.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	4.7	0.2	0.0	4.2	4.2		0.7	0.7	0.1		0.1	
Delay (s)	36.3	13.7	11.2	29.7	16.4		24.9	24.9	23.4		31.5	
Level of Service	D	B	B	C	B		C	C	C		C	
Approach Delay (s)		13.8			17.6			24.3			31.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	16.9
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

7: El Dorado Hills Blvd & Francisco Dr

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	26	0	0	71	63	63	0	339	125	50	0	108	236	3
Future Vol, veh/h	0	2	26	0	0	71	63	63	0	339	125	50	0	108	236	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.65	0.65	0.65	0.92	0.87	0.87	0.92	0.92	0.74	0.74	0.74
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	31	0	0	109	97	97	0	390	144	54	0	146	319	4
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.9	20.7	24.5	18.1
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	7%	0%	36%	100%	0%
Vol Thru, %	0%	71%	93%	100%	32%	0%	99%
Vol Right, %	0%	29%	0%	0%	32%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	339	175	28	0	197	108	239
LT Vol	339	0	2	0	71	108	0
Through Vol	0	125	26	0	63	0	236
RT Vol	0	50	0	0	63	0	3
Lane Flow Rate	390	198	33	0	303	146	323
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.773	0.353	0.077	0	0.603	0.301	0.619
Departure Headway (Hd)	7.253	6.537	8.451	8.414	7.26	7.425	6.903
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	554	426	0	500	487	526
Service Time	4.953	4.237	6.167	6.13	5.26	5.127	4.606
HCM Lane V/C Ratio	0.775	0.357	0.077	0	0.606	0.3	0.614
HCM Control Delay	30.5	12.8	11.9	11.1	20.7	13.3	20.2
HCM Lane LOS	D	B	B	N	C	B	C
HCM 95th-tile Q	6.9	1.6	0.2	0	3.9	1.3	4.2

Queues
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	554	204	372	395	291	890
v/c Ratio	0.80	0.30	0.48	0.72	0.53	0.55
Control Delay	32.7	4.4	27.6	17.7	34.2	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	4.4	27.6	17.7	34.2	15.8
Queue Length 50th (ft)	220	0	81	54	64	152
Queue Length 95th (ft)	308	19	111	119	118	201
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	714	685	1594	843	636	2532
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.30	0.23	0.47	0.46	0.35

Intersection Summary

Description: El Dorado Hills Blvd / Harvard Dr

HCM 2010 Signalized Intersection Summary
8: Harvard Way & El Dorado Hills Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	399	147	309	328	265	810
Future Volume (veh/h)	399	147	309	328	265	810
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	554	204	372	395	291	890
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.72	0.72	0.83	0.83	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	592	476	1251	556	387	1894
Arrive On Green	0.34	0.34	0.36	0.36	0.11	0.54
Sat Flow, veh/h	1757	1411	3597	1557	3408	3597
Grp Volume(v), veh/h	554	204	372	395	291	890
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1557	1704	1752
Q Serve(g_s), s	26.2	9.6	6.6	18.8	7.1	13.4
Cycle Q Clear(g_c), s	26.2	9.6	6.6	18.8	7.1	13.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	592	476	1251	556	387	1894
V/C Ratio(X)	0.94	0.43	0.30	0.71	0.75	0.47
Avail Cap(c_a), veh/h	625	502	1389	617	556	2206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	22.0	19.9	23.8	36.8	12.1
Incr Delay (d2), s/veh	21.0	0.6	0.2	3.9	4.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	3.8	3.2	8.6	3.6	6.5
LnGrp Delay(d),s/veh	48.5	22.6	20.0	27.7	41.4	12.4
LnGrp LOS	D	C	C	C	D	B
Approach Vol, veh/h	758		767			1181
Approach Delay, s/veh	41.5		24.0			19.6
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.8	36.6		33.4		52.4		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	9.1	20.8		28.2		15.4		
Green Ext Time (p_c), s	0.7	9.9		0.7		20.5		

Intersection Summary			
HCM 2010 Ctrl Delay			27.0
HCM 2010 LOS			C

	↗	↘	↖	↑	↓
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	80	215	45	575	1378
v/c Ratio	0.28	0.50	0.27	0.23	0.65
Control Delay	27.8	8.2	37.3	5.1	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	8.2	37.3	5.1	14.5
Queue Length 50th (ft)	32	0	18	28	187
Queue Length 95th (ft)	55	25	59	112	#517
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	801	821	538	3203	2180
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.10	0.26	0.08	0.18	0.63

Intersection Summary

Description: ED Hills Blvd / Olson Ln

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
9: Olson Ln & El Dorado Hills Blvd

10/22/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	60	161	44	558	1177	35
Future Volume (veh/h)	60	161	44	558	1177	35
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	80	215	45	575	1338	40
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.75	0.75	0.97	0.97	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	312	278	61	2371	1976	59
Arrive On Green	0.18	0.18	0.03	0.68	0.57	0.57
Sat Flow, veh/h	1757	1568	1757	3597	3567	104
Grp Volume(v), veh/h	80	215	45	575	674	704
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1826
Q Serve(g_s), s	2.4	8.1	1.6	3.9	16.6	16.7
Cycle Q Clear(g_c), s	2.4	8.1	1.6	3.9	16.6	16.7
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	312	278	61	2371	997	1038
V/C Ratio(X)	0.26	0.77	0.73	0.24	0.68	0.68
Avail Cap(c_a), veh/h	869	776	584	3723	1151	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	24.2	29.5	3.9	9.3	9.3
Incr Delay (d2), s/veh	0.4	4.7	8.8	0.1	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	7.0	0.9	1.9	8.3	8.6
LnGrp Delay(d),s/veh	22.3	28.9	38.3	3.9	10.8	10.8
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	295			620	1378	
Approach Delay, s/veh	27.1			6.4	10.8	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		46.2		15.4	6.6	39.6		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		5.9		10.1	3.6	18.7		
Green Ext Time (p_c), s		31.6		0.9	0.0	16.4		

Intersection Summary			
HCM 2010 Ctrl Delay			11.7
HCM 2010 LOS			B

Promontory Village 7 Traffic Impact Study:

Existing (2015) PM Peak-hour

Calculation Sheets

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	308	0	0	167
Future Vol, veh/h	0	0	308	0	0	167
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	311	0	0	196

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	512	321	0	0	316	0
Stage 1	316	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	520	718	-	-	1239	-
Stage 1	737	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	515	711	-	-	1233	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	831	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1233	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	48	9	231	90	6	131
Future Vol, veh/h	48	9	231	90	6	131
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	54	10	233	91	7	154

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	452	289	0	0	329	0
Stage 1	284	-	-	-	-	-
Stage 2	168	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	564	748	-	-	1225	-
Stage 1	762	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	555	741	-	-	1219	-
Mov Cap-2 Maneuver	555	-	-	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	850	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	555	741	1219	-
HCM Lane V/C Ratio	-	-	0.097	0.014	0.006	-
HCM Control Delay (s)	-	-	12.2	9.9	8	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	0	-

3: Driveway B/Palermo Dr & Alexandra Dr

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	30	66	0	0	39	5	0	0	0	5	0	18
Future Vol, veh/h	30	66	0	0	39	5	0	0	0	5	0	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	34	74	0	0	44	6	0	0	0	6	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	79	0	0	210	201	84	199	199	57
Stage 1	-	-	-	-	-	-	147	147	-	52	52	-
Stage 2	-	-	-	-	-	-	63	54	-	147	147	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1545	-	-	1513	-	-	745	693	972	757	695	1006
Stage 1	-	-	-	-	-	-	853	774	-	958	850	-
Stage 2	-	-	-	-	-	-	945	848	-	853	774	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1538	-	-	1506	-	-	709	671	963	737	673	996
Mov Cap-2 Maneuver	-	-	-	-	-	-	709	671	-	737	673	-
Stage 1	-	-	-	-	-	-	830	753	-	932	846	-
Stage 2	-	-	-	-	-	-	919	844	-	830	753	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	0	0	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1538	-	-	1506	-	-	925
HCM Lane V/C Ratio	-	0.022	-	-	-	-	-	0.032
HCM Control Delay (s)	0	7.4	-	-	0	-	-	9
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	0	43	90	0
Future Vol, veh/h	0	0	0	43	90	0
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	93	93	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	0	46	91	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	142	101	96	0	-	0
Stage 1	96	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	848	952	1491	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	840	943	1484	-	-	-
Mov Cap-2 Maneuver	840	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	969	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1484	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	13	0	0	37	0
Future Vol, veh/h	0	0	0	0	0	0	0	13	0	0	37	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	0.41	0.41	0.41	0.92	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	0	0	0	0	32	0	0	40	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	0	6.7	7.3
HCM LOS	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	13%
Vol Thru, %	100%	100%	0%	87%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	0	13	79
LT Vol	0	0	0	10
Through Vol	37	0	0	69
RT Vol	0	0	13	0
Lane Flow Rate	40	0	32	80
Geometry Grp	1	1	1	1
Degree of Util (X)	0.045	0	0.031	0.09
Departure Headway (Hd)	4.066	4.182	3.555	4.061
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	881	0	998	884
Service Time	2.088	2.241	1.611	2.076
HCM Lane V/C Ratio	0.045	0	0.032	0.09
HCM Control Delay	7.3	7.2	6.7	7.5
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.1	0	0.1	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	10	69	0
Future Vol, veh/h	0	10	69	0
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	10	70	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.5
HCM LOS	A

Lane

Queues
6: Sophia Pkwy & Green Vlly Pkwy

	↗	→	↘	↙	←	↖	↑	↗	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	2	1455	148	161	1005	44	45	230	17
v/c Ratio	0.02	0.82	0.18	0.64	0.42	0.19	0.20	0.59	0.07
Control Delay	36.5	22.5	4.4	43.4	8.5	28.5	28.6	10.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	22.5	4.4	43.4	8.5	28.5	28.6	10.9	0.6
Queue Length 50th (ft)	1	230	3	60	55	16	17	0	0
Queue Length 95th (ft)	9	#651	44	#181	295	48	49	55	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	293	1768	844	293	2390	320	320	452	381
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.82	0.18	0.55	0.42	0.14	0.14	0.51	0.04

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	2	1339	136	142	882	3	80	0	207	3	0	6
Future Volume (veh/h)	2	1339	136	142	882	3	80	0	207	3	0	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	2	1455	148	161	1002	3	89	0	230	6	0	11
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.90	0.90	0.90	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1614	720	200	2051	6	568	0	226	11	0	21
Arrive On Green	0.00	0.46	0.46	0.11	0.57	0.57	0.16	0.00	0.16	0.02	0.00	0.02
Sat Flow, veh/h	1757	3505	1563	1757	3584	11	3514	0	1398	567	0	1040
Grp Volume(v), veh/h	2	1455	148	161	490	515	89	0	230	17	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	1843	1757	0	1398	1607	0	0
Q Serve(g_s), s	0.1	26.5	3.9	6.2	11.5	11.5	1.5	0.0	11.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.1	26.5	3.9	6.2	11.5	11.5	1.5	0.0	11.2	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.35		0.65
Lane Grp Cap(c), veh/h	4	1614	720	200	1003	1055	568	0	226	32	0	0
V/C Ratio(X)	0.52	0.90	0.21	0.80	0.49	0.49	0.16	0.00	1.02	0.53	0.00	0.00
Avail Cap(c_a), veh/h	289	1734	773	289	1003	1055	568	0	226	260	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.5	17.2	11.1	30.0	8.8	8.8	25.0	0.0	29.1	33.6	0.0	0.0
Incr Delay (d2), s/veh	48.6	6.8	0.2	7.4	0.5	0.4	0.1	0.0	64.7	13.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	14.2	1.7	3.4	5.6	5.9	0.7	0.0	8.4	0.4	0.0	0.0
LnGrp Delay(d),s/veh	83.2	24.0	11.3	37.4	9.3	9.2	25.1	0.0	93.9	46.7	0.0	0.0
LnGrp LOS	F	C	B	D	A	A	C		F	D		
Approach Vol, veh/h		1605			1166			319			17	
Approach Delay, s/veh		22.9			13.1			74.7			46.7	
Approach LOS		C			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	37.6		5.2	3.8	45.4		15.0
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.2	28.5		2.7	2.1	13.5		13.2
Green Ext Time (p_c), s	0.1	3.4		0.0	0.0	18.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	26.6
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	48	0	0	27	37	35	0	476	257	37	0	27	154	3
Future Vol, veh/h	0	2	48	0	0	27	37	35	0	476	257	37	0	27	154	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.69	0.69	0.69	0.92	0.90	0.90	0.90	0.92	0.54	0.54	0.54
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	53	0	0	39	54	51	0	529	286	41	0	50	285	6
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.7	13.1	34.4	15.3
HCM LOS	B	B	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	4%	0%	27%	100%	0%
Vol Thru, %	0%	87%	96%	100%	37%	0%	98%
Vol Right, %	0%	13%	0%	0%	35%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	476	294	50	0	99	27	157
LT Vol	476	0	2	0	27	27	0
Through Vol	0	257	48	0	37	0	154
RT Vol	0	37	0	0	35	0	3
Lane Flow Rate	529	327	56	0	143	50	291
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.927	0.519	0.121	0	0.287	0.097	0.522
Departure Headway (Hd)	6.313	5.717	7.814	7.794	7.189	6.983	6.461
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	571	630	457	0	499	512	555
Service Time	4.062	3.466	5.591	5.57	5.249	4.749	4.227
HCM Lane V/C Ratio	0.926	0.519	0.123	0	0.287	0.098	0.524
HCM Control Delay	46.7	14.5	11.7	10.6	13.1	10.5	16.1
HCM Lane LOS	E	B	B	N	B	B	C
HCM 95th-tile Q	11.7	3	0.4	0	1.2	0.3	3

8: Harvard Way & El Dorado Hills Blvd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	168	149	898	196	186	620
v/c Ratio	0.51	0.39	0.68	0.32	0.34	0.28
Control Delay	30.5	8.5	19.7	12.1	27.8	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	8.5	19.7	12.1	27.8	5.6
Queue Length 50th (ft)	56	0	143	35	31	45
Queue Length 95th (ft)	122	38	243	91	70	81
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	877	766	1955	883	781	3005
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.19	0.46	0.22	0.24	0.21

Intersection Summary
Description: El Dorado Hills Blvd / Harvard Dr

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	141	125	844	184	162	539
Future Volume (veh/h)	141	125	844	184	162	539
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	168	149	898	196	186	620
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.84	0.84	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	263	211	1657	737	327	2352
Arrive On Green	0.15	0.15	0.47	0.47	0.10	0.67
Sat Flow, veh/h	1757	1411	3597	1560	3408	3597
Grp Volume(v), veh/h	168	149	898	196	186	620
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1560	1704	1752
Q Serve(g_s), s	5.3	5.9	10.6	4.4	3.1	4.1
Cycle Q Clear(g_c), s	5.3	5.9	10.6	4.4	3.1	4.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	263	211	1657	737	327	2352
V/C Ratio(X)	0.64	0.70	0.54	0.27	0.57	0.26
Avail Cap(c_a), veh/h	914	734	2032	904	814	3228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	23.7	11.0	9.3	25.3	3.9
Incr Delay (d2), s/veh	2.6	4.2	0.4	0.3	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.5	5.2	2.0	1.5	2.0
LnGrp Delay(d),s/veh	26.0	27.9	11.4	9.6	27.6	3.9
LnGrp LOS	C	C	B	A	C	A
Approach Vol, veh/h	317		1094			806
Approach Delay, s/veh	26.9		11.0			9.4
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.6	33.7		13.3		45.3		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	5.1	12.6		7.9		6.1		
Green Ext Time (p_c), s	0.6	15.1		1.0		25.2		

Intersection Summary			
HCM 2010 Ctrl Delay			12.7
HCM 2010 LOS			B

Queues
9: Olson Ln & El Dorado Hills Blvd

	⤴	⤵	↰	↑	↓
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	32	84	185	1129	730
v/c Ratio	0.11	0.25	0.52	0.44	0.51
Control Delay	22.9	8.2	29.1	6.1	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	8.2	29.1	6.1	16.9
Queue Length 50th (ft)	8	0	46	58	82
Queue Length 95th (ft)	35	31	172	255	255
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	1047	954	703	3271	2738
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.09	0.26	0.35	0.27

Intersection Summary
Description: ED Hills Blvd / Olson Ln

HCM 2010 Signalized Intersection Summary
9: Olson Ln & El Dorado Hills Blvd

10/22/2015

	↗	↘	↖	↑	↓	↙
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	28	73	170	1039	653	18
Future Volume (veh/h)	28	73	170	1039	653	18
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	32	84	185	1129	710	20
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.87	0.87	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	138	123	236	2644	1867	53
Arrive On Green	0.08	0.08	0.13	0.75	0.54	0.54
Sat Flow, veh/h	1757	1568	1757	3597	3573	98
Grp Volume(v), veh/h	32	84	185	1129	357	373
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1827
Q Serve(g_s), s	0.9	2.8	5.5	6.3	6.4	6.4
Cycle Q Clear(g_c), s	0.9	2.8	5.5	6.3	6.4	6.4
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	138	123	236	2644	940	980
V/C Ratio(X)	0.23	0.68	0.78	0.43	0.38	0.38
Avail Cap(c_a), veh/h	994	888	668	4261	1317	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	24.2	22.6	2.4	7.3	7.3
Incr Delay (d2), s/veh	0.9	6.7	3.1	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.6	2.9	3.0	3.2	3.3
LnGrp Delay(d),s/veh	24.2	30.9	25.7	2.5	7.6	7.6
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	116			1314	730	
Approach Delay, s/veh	29.0			5.8	7.6	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		45.1		8.7	11.7	33.4		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		8.3		4.8	7.5	8.4		
Green Ext Time (p_c), s		28.2		0.3	0.2	20.5		

Intersection Summary			
HCM 2010 Ctrl Delay			7.6
HCM 2010 LOS			A

Promontory Village 7 Traffic Impact Study:

Existing (2015) AM Peak-hour, Plus Project

Calculation Sheets

HCM 2010 TWSC
1: Driveway A & Sophia Pkwy

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	2	3	108	1	2	301
Future Vol, veh/h	2	3	108	1	2	301
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	4	126	1	2	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	455	136	0	0	132	0
Stage 1	131	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	561	910	-	-	1447	-
Stage 1	893	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	555	901	-	-	1440	-
Mov Cap-2 Maneuver	555	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	721	1440	-
HCM Lane V/C Ratio	-	-	0.009	0.001	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	126	29	68	36	13	218
Future Vol, veh/h	126	29	68	36	13	218
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	152	35	79	42	14	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	365	110	0	0	126	0
Stage 1	105	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	633	941	-	-	1454	-
Stage 1	917	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	620	932	-	-	1447	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	620	932	1447	-
HCM Lane V/C Ratio	-	-	0.245	0.037	0.01	-
HCM Control Delay (s)	-	-	12.7	9	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	0	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	9	27	13	0	92	5	36	0	0	5	0	27
Future Vol, veh/h	9	27	13	0	92	5	36	0	0	5	0	27
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	33	16	0	111	6	46	0	0	6	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	53	0	0	203	189	50	186	194	124
Stage 1	-	-	-	-	-	-	67	67	-	119	119	-
Stage 2	-	-	-	-	-	-	136	122	-	67	75	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1459	-	-	1546	-	-	753	704	1015	772	699	924
Stage 1	-	-	-	-	-	-	941	837	-	883	795	-
Stage 2	-	-	-	-	-	-	865	793	-	941	831	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1452	-	-	1539	-	-	713	692	1005	760	687	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	713	692	-	760	687	-
Stage 1	-	-	-	-	-	-	929	827	-	872	791	-
Stage 2	-	-	-	-	-	-	828	789	-	929	821	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	10.4	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	1452	-	-	1539	-	-	887
HCM Lane V/C Ratio	0.065	0.007	-	-	-	-	-	0.046
HCM Control Delay (s)	10.4	7.5	-	-	0	-	-	9.3
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

4: Beatty Rd (nth) & Driveway C

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	11	5	2	84	30	4
Future Vol, veh/h	11	5	2	84	30	4
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	69	69	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	14	6	3	122	34	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	169	46	44	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	819	1021	1558	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	810	1011	1551	-	-	-
Mov Cap-2 Maneuver	810	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1551	-	864	-	-
HCM Lane V/C Ratio	0.002	-	0.024	-	-
HCM Control Delay (s)	7.3	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	21	0	0	0	14	0	8	94	0
Future Vol, veh/h	0	0	0	21	0	0	0	14	0	8	94	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	1.00	1.00	1.00	0.92	0.69	0.69	0.69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	27	0	0	0	14	0	12	136	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.9	6.8	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	0%	0%	17%
Vol Thru, %	92%	0%	0%	83%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	21	14	35
LT Vol	8	0	0	6
Through Vol	94	0	0	29
RT Vol	0	21	14	0
Lane Flow Rate	148	27	14	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.167	0.028	0.014	0.046
Departure Headway (Hd)	4.067	3.682	3.693	4.167
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	883	954	951	856
Service Time	2.088	1.774	1.787	2.21
HCM Lane V/C Ratio	0.168	0.028	0.015	0.047
HCM Control Delay	7.9	6.9	6.8	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	6	29	0
Future Vol, veh/h	0	6	29	0
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	7	33	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Lane

6: Sophia Pkwy & Green Vlly Pkwy

	↗	→	↘	↙	←	↖	↑	↗	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	7	619	43	181	1680	93	93	104	4
v/c Ratio	0.04	0.45	0.06	0.59	0.78	0.32	0.32	0.30	0.01
Control Delay	31.2	16.2	0.2	34.7	16.2	24.6	24.6	5.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	16.2	0.2	34.7	16.2	24.6	24.6	5.6	0.0
Queue Length 50th (ft)	2	72	0	49	138	27	27	0	0
Queue Length 95th (ft)	16	192	0	#161	#593	67	67	13	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	355	2143	983	355	2143	381	383	418	512
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.29	0.04	0.51	0.78	0.24	0.24	0.25	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	6	551	38	143	1327	0	138	3	79	0	0	2
Future Volume (veh/h)	6	551	38	143	1327	0	138	3	79	0	0	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	7	619	43	181	1680	0	185	0	104	0	0	4
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.76	0.76	0.76	0.50	0.50	0.50
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	13	1639	731	226	2064	0	406	0	161	0	0	8
Arrive On Green	0.01	0.47	0.47	0.13	0.59	0.00	0.12	0.00	0.12	0.00	0.00	0.01
Sat Flow, veh/h	1757	3505	1563	1757	3597	0	3514	0	1393	0	0	1540
Grp Volume(v), veh/h	7	619	43	181	1680	0	185	0	104	0	0	4
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	0	1757	0	1393	0	0	1540
Q Serve(g_s), s	0.2	6.8	0.9	6.0	22.6	0.0	2.9	0.0	4.3	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.2	6.8	0.9	6.0	22.6	0.0	2.9	0.0	4.3	0.0	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	13	1639	731	226	2064	0	406	0	161	0	0	8
V/C Ratio(X)	0.54	0.38	0.06	0.80	0.81	0.00	0.46	0.00	0.65	0.00	0.00	0.48
Avail Cap(c_a), veh/h	335	2012	897	335	2064	0	659	0	261	0	0	289
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	10.3	8.7	25.3	9.7	0.0	24.7	0.0	25.2	0.0	0.0	29.6
Incr Delay (d2), s/veh	17.7	0.2	0.0	5.7	2.7	0.0	0.8	0.0	4.5	0.0	0.0	39.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.3	0.4	3.2	11.5	0.0	1.5	0.0	1.8	0.0	0.0	0.2
LnGrp Delay(d),s/veh	47.2	10.5	8.7	31.0	12.4	0.0	25.5	0.0	29.7	0.0	0.0	68.9
LnGrp LOS	D	B	A	C	B		C		C			E
Approach Vol, veh/h		669			1861			289			4	
Approach Delay, s/veh		10.7			14.2			27.0			68.9	
Approach LOS		B			B			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	33.6		4.1	4.0	40.9		10.7
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.0	8.8		2.2	2.2	24.6		6.3
Green Ext Time (p_c), s	0.1	19.1		0.0	0.0	8.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

HCM 2010 AWSC
7: El Dorado Hills Blvd & Francisco Dr

10/22/2015

Intersection	
Intersection Delay, s/veh	21.4
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	26	0	0	71	63	63	0	341	127	50	0	108	237	3
Future Vol, veh/h	0	2	26	0	0	71	63	63	0	341	127	50	0	108	237	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.65	0.65	0.65	0.92	0.87	0.87	0.92	0.92	0.74	0.74	0.74
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	31	0	0	109	97	97	0	392	146	54	0	146	320	4
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.9	20.7	24.8	18.2
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	7%	0%	36%	100%	0%
Vol Thru, %	0%	72%	93%	100%	32%	0%	99%
Vol Right, %	0%	28%	0%	0%	32%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	341	177	28	0	197	108	240
LT Vol	341	0	2	0	71	108	0
Through Vol	0	127	26	0	63	0	237
RT Vol	0	50	0	0	63	0	3
Lane Flow Rate	392	200	33	0	303	146	324
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.778	0.358	0.077	0	0.603	0.301	0.623
Departure Headway (Hd)	7.256	6.543	8.465	8.428	7.271	7.432	6.911
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	553	425	0	500	486	525
Service Time	4.956	4.243	6.183	6.146	5.271	5.135	4.613
HCM Lane V/C Ratio	0.781	0.362	0.078	0	0.606	0.3	0.617
HCM Control Delay	31	12.8	11.9	11.1	20.7	13.3	20.4
HCM Lane LOS	D	B	B	N	C	B	C
HCM 95th-tile Q	7	1.6	0.2	0	3.9	1.3	4.2

Queues

8: Harvard Way & El Dorado Hills Blvd

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	557	204	377	402	291	892
v/c Ratio	0.81	0.30	0.47	0.72	0.54	0.55
Control Delay	33.5	4.5	27.4	17.7	34.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	4.5	27.4	17.7	34.8	15.7
Queue Length 50th (ft)	223	0	82	57	64	153
Queue Length 95th (ft)	313	19	112	123	118	201
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	705	678	1572	836	627	2497
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.30	0.24	0.48	0.46	0.36

Intersection Summary

Description: El Dorado Hills Blvd / Harvard Dr

HCM 2010 Signalized Intersection Summary
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	401	147	313	334	265	812
Future Volume (veh/h)	401	147	313	334	265	812
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	557	204	377	402	291	892
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.72	0.72	0.83	0.83	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	594	477	1253	557	387	1894
Arrive On Green	0.34	0.34	0.36	0.36	0.11	0.54
Sat Flow, veh/h	1757	1411	3597	1557	3408	3597
Grp Volume(v), veh/h	557	204	377	402	291	892
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1557	1704	1752
Q Serve(g_s), s	26.5	9.7	6.7	19.3	7.1	13.5
Cycle Q Clear(g_c), s	26.5	9.7	6.7	19.3	7.1	13.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	594	477	1253	557	387	1894
V/C Ratio(X)	0.94	0.43	0.30	0.72	0.75	0.47
Avail Cap(c_a), veh/h	621	498	1380	613	553	2192
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	22.1	20.0	24.0	37.1	12.2
Incr Delay (d2), s/veh	21.7	0.6	0.2	4.3	4.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	3.8	3.3	8.9	3.6	6.5
LnGrp Delay(d),s/veh	49.4	22.7	20.2	28.3	41.8	12.5
LnGrp LOS	D	C	C	C	D	B
Approach Vol, veh/h	761		779			1183
Approach Delay, s/veh	42.2		24.3			19.7
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.8	36.9		33.7		52.7		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	9.1	21.3		28.5		15.5		
Green Ext Time (p_c), s	0.6	9.6		0.6		20.7		

Intersection Summary			
HCM 2010 Ctrl Delay			27.3
HCM 2010 LOS			C

Queues

9: Olson Ln & El Dorado Hills Blvd

10/22/2015

	↗	↘	↖	↑	↓
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	92	240	53	575	1382
v/c Ratio	0.31	0.53	0.31	0.23	0.66
Control Delay	28.7	8.2	38.0	5.1	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	8.2	38.0	5.1	15.0
Queue Length 50th (ft)	37	0	22	30	194
Queue Length 95th (ft)	63	24	66	112	#527
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	783	822	526	3183	2103
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.29	0.10	0.18	0.66

Intersection Summary

Description: ED Hills Blvd / Olson Ln

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	69	180	51	558	1177	39
Future Volume (veh/h)	69	180	51	558	1177	39
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	92	240	53	575	1338	44
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.75	0.75	0.97	0.97	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	340	303	67	2333	1929	63
Arrive On Green	0.19	0.19	0.04	0.67	0.56	0.56
Sat Flow, veh/h	1757	1568	1757	3597	3555	114
Grp Volume(v), veh/h	92	240	53	575	676	706
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1824
Q Serve(g_s), s	2.8	9.3	1.9	4.2	17.8	17.8
Cycle Q Clear(g_c), s	2.8	9.3	1.9	4.2	17.8	17.8
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	340	303	67	2333	976	1016
V/C Ratio(X)	0.27	0.79	0.79	0.25	0.69	0.69
Avail Cap(c_a), veh/h	839	749	564	3595	1112	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	24.5	30.5	4.3	10.2	10.2
Incr Delay (d2), s/veh	0.4	4.8	10.6	0.1	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.0	1.1	2.0	8.9	9.3
LnGrp Delay(d),s/veh	22.4	29.4	41.0	4.3	12.0	11.9
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	332			628	1382	
Approach Delay, s/veh	27.4			7.4	11.9	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		47.0		16.8	6.9	40.1		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		6.2		11.3	3.9	19.8		
Green Ext Time (p_c), s		31.6		1.1	0.0	15.7		

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

Promontory Village 7 Traffic Impact Study:

Existing (2015) PM Peak-hour, Plus Project

Calculation Sheets

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	2	2	340	3	4	185
Future Vol, veh/h	2	2	340	3	4	185
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	3	343	3	5	218

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	577	355	0	0	351	0
Stage 1	350	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	477	687	-	-	1202	-
Stage 1	711	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	470	680	-	-	1196	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	800	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	556	1196	-
HCM Lane V/C Ratio	-	-	0.009	0.004	-
HCM Control Delay (s)	-	-	11.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM 2010 TWSC
2: Sophia Pkwy

10/22/2015

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	68	22	232	122	28	133
Future Vol, veh/h	68	22	232	122	28	133
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	76	25	234	123	33	156

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	523	306	0	0	363	0
Stage 1	301	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	513	732	-	-	1190	-
Stage 1	748	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	492	725	-	-	1184	-
Mov Cap-2 Maneuver	492	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	784	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	492	725	1184	-
HCM Lane V/C Ratio	-	-	0.155	0.034	0.028	-
HCM Control Delay (s)	-	-	13.7	10.1	8.1	0
HCM Lane LOS	-	-	B	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	0.1	-

HCM 2010 TWSC
3: Driveway B/Palermo Dr & Alexandra Dr

10/22/2015

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	30	80	41	0	48	5	23	0	0	5	0	18
Future Vol, veh/h	30	80	41	0	48	5	23	0	0	5	0	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	34	90	46	0	54	6	29	0	0	6	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	141	0	0	258	250	123	247	270	67
Stage 1	-	-	-	-	-	-	185	185	-	62	62	-
Stage 2	-	-	-	-	-	-	73	65	-	185	208	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1531	-	-	1436	-	-	693	651	925	705	635	994
Stage 1	-	-	-	-	-	-	814	745	-	947	841	-
Stage 2	-	-	-	-	-	-	934	839	-	814	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1524	-	-	1429	-	-	659	630	916	686	615	985
Mov Cap-2 Maneuver	-	-	-	-	-	-	659	630	-	686	615	-
Stage 1	-	-	-	-	-	-	792	725	-	921	837	-
Stage 2	-	-	-	-	-	-	908	835	-	792	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	10.7	9.1
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	659	1524	-	-	1429	-	-	900
HCM Lane V/C Ratio	0.045	0.022	-	-	-	-	-	0.033
HCM Control Delay (s)	10.7	7.4	-	-	0	-	-	9.1
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

HCM 2010 TWSC
4: Beatty Rd (nth) & Driveway C

10/22/2015

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	7	4	6	45	91	13
Future Vol, veh/h	7	4	6	45	91	13
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	93	93	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	5	6	48	92	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	164	108	110	0	-	0
Stage 1	103	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	824	943	1474	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	813	934	1467	-	-	-
Mov Cap-2 Maneuver	813	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1467	-	853	-	-
HCM Lane V/C Ratio	0.004	-	0.017	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 2010 AWSC
5: Beatty Dr & Powers Dr

10/22/2015

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	14	0	0	0	13	0	24	45	0
Future Vol, veh/h	0	0	0	14	0	0	0	13	0	24	45	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	0.41	0.41	0.41	0.92	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	18	0	0	0	32	0	26	48	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.8	6.8	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	0%	0%	12%
Vol Thru, %	65%	0%	0%	88%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	14	13	84
LT Vol	24	0	0	10
Through Vol	45	0	0	74
RT Vol	0	14	13	0
Lane Flow Rate	74	18	32	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.086	0.018	0.032	0.097
Departure Headway (Hd)	4.171	3.648	3.637	4.117
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	858	965	968	870
Service Time	2.201	1.731	1.719	2.146
HCM Lane V/C Ratio	0.086	0.019	0.033	0.098
HCM Control Delay	7.6	6.8	6.8	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.1	0.3

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	10	74	0
Future Vol, veh/h	0	10	74	0
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	10	75	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.6
HCM LOS	A

Lane

Queues

6: Sophia Pkwy & Green Vlly Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	2	1455	167	168	1005	50	50	234	17
v/c Ratio	0.02	0.83	0.20	0.66	0.42	0.22	0.22	0.59	0.07
Control Delay	36.5	22.7	4.3	44.2	8.5	29.0	29.0	10.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	22.7	4.3	44.2	8.5	29.0	29.0	10.9	0.6
Queue Length 50th (ft)	1	234	3	63	56	20	20	0	0
Queue Length 95th (ft)	9	#651	46	#192	295	53	53	56	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	292	1761	850	292	2391	319	319	455	380
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.83	0.20	0.58	0.42	0.16	0.16	0.51	0.04

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	2	1339	154	148	882	3	90	0	211	3	0	6
Future Volume (veh/h)	2	1339	154	148	882	3	90	0	211	3	0	6
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	2	1455	167	168	1002	3	100	0	234	6	0	11
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.90	0.90	0.90	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1609	718	208	2062	6	564	0	224	11	0	21
Arrive On Green	0.00	0.46	0.46	0.12	0.58	0.58	0.16	0.00	0.16	0.02	0.00	0.02
Sat Flow, veh/h	1757	3505	1563	1757	3584	11	3514	0	1398	567	0	1040
Grp Volume(v), veh/h	2	1455	167	168	490	515	100	0	234	17	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	1843	1757	0	1398	1607	0	0
Q Serve(g_s), s	0.1	26.8	4.5	6.5	11.5	11.5	1.7	0.0	11.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.1	26.8	4.5	6.5	11.5	11.5	1.7	0.0	11.2	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.35		0.65
Lane Grp Cap(c), veh/h	4	1609	718	208	1008	1060	564	0	224	32	0	0
V/C Ratio(X)	0.52	0.90	0.23	0.81	0.49	0.49	0.18	0.00	1.04	0.53	0.00	0.00
Avail Cap(c_a), veh/h	287	1722	768	287	1008	1060	564	0	224	258	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.8	17.5	11.4	30.0	8.7	8.7	25.3	0.0	29.3	33.9	0.0	0.0
Incr Delay (d2), s/veh	48.6	7.0	0.2	8.9	0.5	0.4	0.2	0.0	71.9	13.1	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	14.3	2.0	3.7	5.6	5.9	0.8	0.0	8.8	0.4	0.0	0.0
LnGrp Delay(d),s/veh	83.4	24.5	11.6	38.9	9.2	9.2	25.5	0.0	101.2	47.0	0.0	0.0
LnGrp LOS	F	C	B	D	A	A	C		F	D		
Approach Vol, veh/h		1624			1173			334			17	
Approach Delay, s/veh		23.2			13.4			78.5			47.0	
Approach LOS		C			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	37.8		5.2	3.8	45.9		15.0
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.5	28.8		2.7	2.1	13.5		13.2
Green Ext Time (p_c), s	0.1	3.3		0.0	0.0	18.5		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			25.6
HCM 2010 LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

HCM 2010 AWSC
7: El Dorado Hills Blvd & Francisco Dr

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	48	0	0	27	37	35	0	478	258	37	0	27	156	3
Future Vol, veh/h	0	2	48	0	0	27	37	35	0	478	258	37	0	27	156	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.69	0.69	0.69	0.92	0.90	0.90	0.90	0.92	0.54	0.54	0.54
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	53	0	0	39	54	51	0	531	287	41	0	50	289	6
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.7	13.2	35.2	15.5
HCM LOS	B	B	E	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	4%	0%	27%	100%	0%
Vol Thru, %	0%	87%	96%	100%	37%	0%	98%
Vol Right, %	0%	13%	0%	0%	35%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	478	295	50	0	99	27	159
LT Vol	478	0	2	0	27	27	0
Through Vol	0	258	48	0	37	0	156
RT Vol	0	37	0	0	35	0	3
Lane Flow Rate	531	328	56	0	143	50	294
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.933	0.521	0.121	0	0.287	0.097	0.529
Departure Headway (Hd)	6.323	5.727	7.832	7.811	7.205	6.993	6.471
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	574	629	456	0	498	511	556
Service Time	4.068	3.472	5.607	5.587	5.264	4.756	4.233
HCM Lane V/C Ratio	0.925	0.521	0.123	0	0.287	0.098	0.529
HCM Control Delay	47.9	14.6	11.7	10.6	13.2	10.5	16.3
HCM Lane LOS	E	B	B	N	B	B	C
HCM 95th-tile Q	11.9	3	0.4	0	1.2	0.3	3.1

Queues
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	176	149	901	200	186	624
v/c Ratio	0.52	0.39	0.68	0.33	0.34	0.28
Control Delay	30.8	8.3	20.0	12.3	28.0	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	8.3	20.0	12.3	28.0	5.7
Queue Length 50th (ft)	60	0	145	36	32	46
Queue Length 95th (ft)	128	38	247	94	71	83
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	869	761	1939	876	775	2983
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.46	0.23	0.24	0.21

Intersection Summary

Description: El Dorado Hills Blvd / Harvard Dr

HCM 2010 Signalized Intersection Summary
8: Harvard Way & El Dorado Hills Blvd

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	148	125	847	188	162	543
Future Volume (veh/h)	148	125	847	188	162	543
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	176	149	901	200	186	624
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.84	0.84	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	264	212	1659	738	327	2352
Arrive On Green	0.15	0.15	0.47	0.47	0.10	0.67
Sat Flow, veh/h	1757	1411	3597	1560	3408	3597
Grp Volume(v), veh/h	176	149	901	200	186	624
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1560	1704	1752
Q Serve(g_s), s	5.6	5.9	10.7	4.6	3.1	4.2
Cycle Q Clear(g_c), s	5.6	5.9	10.7	4.6	3.1	4.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	264	212	1659	738	327	2352
V/C Ratio(X)	0.67	0.70	0.54	0.27	0.57	0.27
Avail Cap(c_a), veh/h	911	732	2027	902	812	3219
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	23.7	11.0	9.4	25.4	3.9
Incr Delay (d2), s/veh	2.9	4.2	0.4	0.3	2.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.5	5.2	2.0	1.5	2.0
LnGrp Delay(d),s/veh	26.5	27.9	11.4	9.6	27.6	4.0
LnGrp LOS	C	C	B	A	C	A
Approach Vol, veh/h	325		1101			810
Approach Delay, s/veh	27.1		11.1			9.4
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	11.6	33.8		13.3		45.5		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	5.1	12.7		7.9		6.2		
Green Ext Time (p_c), s	0.6	15.1		1.0		25.3		

Intersection Summary			
HCM 2010 Ctrl Delay			12.8
HCM 2010 LOS			B

Queues

9: Olson Ln & El Dorado Hills Blvd

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	39	98	208	1129	740
v/c Ratio	0.13	0.28	0.55	0.44	0.54
Control Delay	23.5	8.1	29.8	6.1	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	8.1	29.8	6.1	17.4
Queue Length 50th (ft)	10	0	54	60	87
Queue Length 95th (ft)	40	33	193	254	259
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	1066	976	716	3269	2666
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.10	0.29	0.35	0.28

Intersection Summary
Description: ED Hills Blvd / Olson Ln

	↗	↘	↖	↑	↓	↙
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	34	85	191	1039	653	28
Future Volume (veh/h)	34	85	191	1039	653	28
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	39	98	208	1129	710	30
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.87	0.87	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	160	143	261	2626	1785	75
Arrive On Green	0.09	0.09	0.15	0.75	0.52	0.52
Sat Flow, veh/h	1757	1568	1757	3597	3518	145
Grp Volume(v), veh/h	39	98	208	1129	363	377
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1818
Q Serve(g_s), s	1.2	3.4	6.5	6.7	7.1	7.1
Cycle Q Clear(g_c), s	1.2	3.4	6.5	6.7	7.1	7.1
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	160	143	261	2626	913	947
V/C Ratio(X)	0.24	0.69	0.80	0.43	0.40	0.40
Avail Cap(c_a), veh/h	950	847	638	4068	1258	1305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	24.9	23.2	2.6	8.2	8.2
Incr Delay (d2), s/veh	0.8	5.9	3.0	0.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.2	3.3	3.2	3.4	3.5
LnGrp Delay(d),s/veh	24.6	30.8	26.2	2.8	8.5	8.5
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	137			1337	740	
Approach Delay, s/veh	29.0			6.4	8.5	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		46.8		9.6	12.9	33.9		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		8.7		5.4	8.5	9.1		
Green Ext Time (p_c), s		28.4		0.4	0.3	20.3		

Intersection Summary	
HCM 2010 Ctrl Delay	8.5
HCM 2010 LOS	A

Promontory Village 7 Traffic Impact Study:

Existing (2025) AM Peak-hour

Calculation Sheets

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	98	0	0	273
Future Vol, veh/h	0	0	98	0	0	273
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	114	0	0	290

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	409	124	0	0	119	0
Stage 1	119	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	597	924	-	-	1463	-
Stage 1	904	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	591	915	-	-	1456	-
Mov Cap-2 Maneuver	591	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1456	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	100	16	66	24	10	217
Future Vol, veh/h	100	16	66	24	10	217
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	120	19	77	28	11	231

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	348	101	0	0	110	0
Stage 1	96	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	647	952	-	-	1474	-
Stage 1	925	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	635	943	-	-	1467	-
Mov Cap-2 Maneuver	635	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	635	943	1467	-
HCM Lane V/C Ratio	-	-	0.19	0.02	0.007	-
HCM Control Delay (s)	-	-	12	8.9	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	0	-

HCM 2010 TWSC
3: Driveway B/Palermo Dr & Alexandra Dr

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	9	25	0	0	89	5	0	0	0	5	0	27
Future Vol, veh/h	9	25	0	0	89	5	0	0	0	5	0	27
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	30	0	0	107	6	0	0	0	6	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	118	0	0	35	0	0	190	175	40	172	172	120
Stage 1	-	-	-	-	-	-	57	57	-	115	115	-
Stage 2	-	-	-	-	-	-	133	118	-	57	57	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1464	-	-	1570	-	-	768	717	1028	789	719	929
Stage 1	-	-	-	-	-	-	952	845	-	887	798	-
Stage 2	-	-	-	-	-	-	868	796	-	952	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1457	-	-	1563	-	-	728	705	1018	777	707	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	728	705	-	777	707	-
Stage 1	-	-	-	-	-	-	940	835	-	876	794	-
Stage 2	-	-	-	-	-	-	831	792	-	940	835	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	0	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1457	-	-	1563	-	-	894
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.046
HCM Control Delay (s)	0	7.5	-	-	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	0	92	61	0
Future Vol, veh/h	0	0	0	92	61	0
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	69	69	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	0	133	69	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	207	79	74	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	133	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	779	979	1519	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	772	970	1512	-	-	-
Mov Cap-2 Maneuver	772	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	887	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1512	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	14	0	0	100	0
Future Vol, veh/h	0	0	0	0	0	0	0	14	0	0	100	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	1.00	1.00	1.00	0.92	0.69	0.69	0.69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	0	0	0	0	14	0	0	145	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	0	6.9	7.8
HCM LOS	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	10%
Vol Thru, %	100%	100%	0%	90%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	0	14	61
LT Vol	0	0	0	6
Through Vol	100	0	0	55
RT Vol	0	0	14	0
Lane Flow Rate	145	0	14	69
Geometry Grp	1	1	1	1
Degree of Util (X)	0.162	0	0.014	0.079
Departure Headway (Hd)	4.027	4.331	3.717	4.102
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	893	0	945	872
Service Time	2.045	2.428	1.811	2.134
HCM Lane V/C Ratio	0.162	0	0.015	0.079
HCM Control Delay	7.8	7.4	6.9	7.5
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.6	0	0	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	6	55	0
Future Vol, veh/h	0	6	55	0
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	7	63	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.5
HCM LOS	A

Lane

Queues
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	8	781	99	178	1973	142	141	96	4
v/c Ratio	0.05	0.56	0.15	0.61	0.93	0.45	0.44	0.26	0.01
Control Delay	33.4	17.7	4.3	37.6	23.6	28.1	27.9	4.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	17.7	4.3	37.6	23.6	28.1	27.9	4.5	0.0
Queue Length 50th (ft)	3	106	0	52	233	43	43	0	0
Queue Length 95th (ft)	19	247	28	#172	#755	104	103	9	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	338	2038	940	338	2125	362	364	403	483
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.38	0.11	0.53	0.93	0.39	0.39	0.24	0.01

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	7	695	88	141	1559	0	212	3	73	0	0	2
Future Volume (veh/h)	7	695	88	141	1559	0	212	3	73	0	0	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	8	781	99	178	1973	0	282	0	96	0	0	4
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.76	0.76	0.76	0.50	0.50	0.50
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	15	1646	734	222	2060	0	429	0	170	0	0	8
Arrive On Green	0.01	0.47	0.47	0.13	0.59	0.00	0.12	0.00	0.12	0.00	0.00	0.01
Sat Flow, veh/h	1757	3505	1563	1757	3597	0	3514	0	1394	0	0	1539
Grp Volume(v), veh/h	8	781	99	178	1973	0	282	0	96	0	0	4
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	0	1757	0	1394	0	0	1539
Q Serve(g_s), s	0.3	9.3	2.2	6.0	32.4	0.0	4.7	0.0	4.0	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	9.3	2.2	6.0	32.4	0.0	4.7	0.0	4.0	0.0	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	15	1646	734	222	2060	0	429	0	170	0	0	8
V/C Ratio(X)	0.55	0.47	0.13	0.80	0.96	0.00	0.66	0.00	0.56	0.00	0.00	0.48
Avail Cap(c_a), veh/h	328	1968	877	328	2060	0	644	0	256	0	0	282
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	11.1	9.2	26.0	11.9	0.0	25.6	0.0	25.3	0.0	0.0	30.3
Incr Delay (d2), s/veh	16.1	0.3	0.1	5.9	11.6	0.0	1.8	0.0	3.0	0.0	0.0	39.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.5	1.0	3.3	18.7	0.0	2.4	0.0	1.7	0.0	0.0	0.2
LnGrp Delay(d),s/veh	46.2	11.3	9.3	31.9	23.5	0.0	27.4	0.0	28.3	0.0	0.0	69.6
LnGrp LOS	D	B	A	C	C		C		C			E
Approach Vol, veh/h		888			2151			378			4	
Approach Delay, s/veh		11.4			24.1			27.6			69.6	
Approach LOS		B			C			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	34.4		4.1	4.1	41.6		11.3
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.0	11.3		2.2	2.3	34.4		6.7
Green Ext Time (p_c), s	0.1	17.4		0.0	0.0	0.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	21.3
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	25.7
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	26	0	0	72	63	63	0	342	125	50	0	116	295	3
Future Vol, veh/h	0	2	26	0	0	72	63	63	0	342	125	50	0	116	295	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.65	0.65	0.65	0.92	0.87	0.87	0.92	0.92	0.74	0.74	0.74
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	31	0	0	111	97	97	0	393	144	54	0	157	399	4
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	12.3	22.4	28	25.8
HCM LOS	B	C	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	7%	0%	36%	100%	0%
Vol Thru, %	0%	71%	93%	100%	32%	0%	99%
Vol Right, %	0%	29%	0%	0%	32%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	342	175	28	0	198	116	298
LT Vol	342	0	2	0	72	116	0
Through Vol	0	125	26	0	63	0	295
RT Vol	0	50	0	0	63	0	3
Lane Flow Rate	393	198	33	0	305	157	403
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.814	0.371	0.08	0	0.631	0.327	0.782
Departure Headway (Hd)	7.454	6.737	8.765	8.728	7.462	7.51	6.99
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	535	409	0	484	480	519
Service Time	5.19	4.472	6.52	6.483	5.493	5.247	4.727
HCM Lane V/C Ratio	0.807	0.37	0.081	0	0.63	0.327	0.776
HCM Control Delay	35.4	13.4	12.3	11.5	22.4	13.9	30.5
HCM Lane LOS	E	B	B	N	C	B	D
HCM 95th-tile Q	7.8	1.7	0.3	0	4.3	1.4	7.1

Queues
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	554	204	381	423	326	954
v/c Ratio	0.82	0.31	0.46	0.74	0.59	0.57
Control Delay	35.6	4.7	27.0	18.1	36.4	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	4.7	27.0	18.1	36.4	15.8
Queue Length 50th (ft)	231	0	85	63	74	167
Queue Length 95th (ft)	324	19	113	131	136	217
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	693	670	1546	831	617	2455
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.30	0.25	0.51	0.53	0.39

Intersection Summary
Description: El Dorado Hills Blvd / Harvard Dr

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	399	147	316	351	297	868
Future Volume (veh/h)	399	147	316	351	297	868
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	554	204	381	423	326	954
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.72	0.72	0.83	0.83	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	587	471	1256	558	416	1920
Arrive On Green	0.33	0.33	0.36	0.36	0.12	0.55
Sat Flow, veh/h	1757	1411	3597	1557	3408	3597
Grp Volume(v), veh/h	554	204	381	423	326	954
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1557	1704	1752
Q Serve(g_s), s	27.3	10.0	7.0	21.3	8.3	15.0
Cycle Q Clear(g_c), s	27.3	10.0	7.0	21.3	8.3	15.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	587	471	1256	558	416	1920
V/C Ratio(X)	0.94	0.43	0.30	0.76	0.78	0.50
Avail Cap(c_a), veh/h	603	484	1340	595	537	2129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	23.0	20.5	25.1	37.9	12.5
Incr Delay (d2), s/veh	23.4	0.6	0.2	5.8	6.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	4.0	3.4	10.1	4.3	7.2
LnGrp Delay(d),s/veh	52.2	23.7	20.7	30.9	44.5	12.8
LnGrp LOS	D	C	C	C	D	B
Approach Vol, veh/h	758		804			1280
Approach Delay, s/veh	44.5		26.1			20.9
Approach LOS	D		C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.9	37.8		34.2		54.7		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	10.3	23.3		29.3		17.0		
Green Ext Time (p_c), s	0.6	8.6		0.4		21.5		

Intersection Summary	
HCM 2010 Ctrl Delay	28.7
HCM 2010 LOS	C

9: Olson Ln & El Dorado Hills Blvd

	↗	↘	↖	↑	↓
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	83	255	53	603	1448
v/c Ratio	0.29	0.55	0.31	0.24	0.68
Control Delay	28.5	8.4	37.9	5.1	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	8.4	37.9	5.1	15.5
Queue Length 50th (ft)	33	0	22	31	206
Queue Length 95th (ft)	58	24	66	118	#572
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	781	828	525	3192	2120
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.11	0.31	0.10	0.19	0.68

Intersection Summary

Description: ED Hills Blvd / Olson Ln

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
9: Olson Ln & El Dorado Hills Blvd

10/22/2015

	↗	↘	↖	↑	↓	↙
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	62	191	51	585	1238	36
Future Volume (veh/h)	62	191	51	585	1238	36
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	83	255	53	603	1407	41
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.75	0.75	0.97	0.97	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	354	316	67	2323	1937	56
Arrive On Green	0.20	0.20	0.04	0.66	0.56	0.56
Sat Flow, veh/h	1757	1568	1757	3597	3570	101
Grp Volume(v), veh/h	83	255	53	603	708	740
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1826
Q Serve(g_s), s	2.6	10.3	2.0	4.6	19.9	20.0
Cycle Q Clear(g_c), s	2.6	10.3	2.0	4.6	19.9	20.0
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	354	316	67	2323	976	1017
V/C Ratio(X)	0.23	0.81	0.80	0.26	0.73	0.73
Avail Cap(c_a), veh/h	809	722	544	3467	1072	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	25.2	31.6	4.5	10.9	10.9
Incr Delay (d2), s/veh	0.4	5.1	10.9	0.1	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	8.9	1.2	2.2	10.1	10.5
LnGrp Delay(d),s/veh	22.5	30.3	42.5	4.6	13.3	13.3
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	338			656	1448	
Approach Delay, s/veh	28.4			7.7	13.3	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.4		17.8	7.0	41.4		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		6.6		12.3	4.0	22.0		
Green Ext Time (p_c), s		34.0		1.1	0.0	14.9		

Intersection Summary			
HCM 2010 Ctrl Delay			13.9
HCM 2010 LOS			B

Promontory Village 7 Traffic Impact Study:

Existing (2025) PM Peak-hour

Calculation Sheets

HCM 2010 TWSC
1: Driveway A & Sophia Pkwy

10/22/2015

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	308	0	0	167
Future Vol, veh/h	0	0	308	0	0	167
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	311	0	0	196

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	512	321	0	0	316	0
Stage 1	316	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	520	718	-	-	1239	-
Stage 1	737	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	515	711	-	-	1233	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	831	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1233	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	49	9	231	96	9	131
Future Vol, veh/h	49	9	231	96	9	131
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	55	10	233	97	11	154

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	462	292	0	0	335	0
Stage 1	287	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	556	745	-	-	1219	-
Stage 1	759	-	-	-	-	-
Stage 2	853	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	545	738	-	-	1213	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	545	738	1213	-
HCM Lane V/C Ratio	-	-	0.101	0.014	0.009	-
HCM Control Delay (s)	-	-	12.3	9.9	8	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	30	75	0	0	40	5	0	0	0	5	0	18
Future Vol, veh/h	30	75	0	0	40	5	0	0	0	5	0	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	34	84	0	0	45	6	0	0	0	6	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	89	0	0	221	213	94	210	210	58
Stage 1	-	-	-	-	-	-	157	157	-	53	53	-
Stage 2	-	-	-	-	-	-	64	56	-	157	157	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1542	-	-	1500	-	-	733	683	960	745	685	1005
Stage 1	-	-	-	-	-	-	843	766	-	957	849	-
Stage 2	-	-	-	-	-	-	944	846	-	843	766	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1535	-	-	1493	-	-	697	662	951	725	663	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	697	662	-	725	663	-
Stage 1	-	-	-	-	-	-	820	745	-	931	845	-
Stage 2	-	-	-	-	-	-	918	842	-	820	745	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1535	-	-	1493	-	-	920
HCM Lane V/C Ratio	-	0.022	-	-	-	-	-	0.032
HCM Control Delay (s)	0	7.4	-	-	0	-	-	9
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

HCM 2010 TWSC
4: Beatty Rd (nth) & Driveway C

10/22/2015

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	0	62	113	0
Future Vol, veh/h	0	0	0	62	113	0
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	93	93	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	0	0	67	114	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	186	124	119	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	67	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	801	924	1463	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	793	915	1456	-	-	-
Mov Cap-2 Maneuver	793	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1456	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	13	0	0	56	0
Future Vol, veh/h	0	0	0	0	0	0	0	13	0	0	56	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	0.41	0.41	0.41	0.92	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	0	0	0	0	32	0	0	60	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	0	6.8	7.4
HCM LOS	-	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%	10%
Vol Thru, %	100%	100%	0%	90%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	0	13	102
LT Vol	0	0	0	10
Through Vol	56	0	0	92
RT Vol	0	0	13	0
Lane Flow Rate	60	0	32	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.068	0	0.032	0.117
Departure Headway (Hd)	4.084	4.259	3.632	4.071
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	876	0	972	882
Service Time	2.113	2.338	1.705	2.091
HCM Lane V/C Ratio	0.068	0	0.033	0.117
HCM Control Delay	7.4	7.3	6.8	7.6
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.2	0	0.1	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	10	92	0
Future Vol, veh/h	0	10	92	0
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	10	93	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.6
HCM LOS	A

Lane

Queues

6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	2	1720	222	161	1239	72	72	230	19
v/c Ratio	0.02	1.01	0.27	0.67	0.54	0.30	0.30	0.58	0.08
Control Delay	38.5	47.2	5.8	47.1	11.1	31.3	31.3	10.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	47.2	5.8	47.1	11.1	31.3	31.3	10.5	0.6
Queue Length 50th (ft)	1	327	10	61	83	28	28	0	0
Queue Length 95th (ft)	9	#825	68	#181	395	71	71	55	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	282	1702	837	282	2298	310	310	445	370
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	1.01	0.27	0.57	0.54	0.23	0.23	0.52	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	2	1582	204	142	1088	3	130	0	207	3	0	7
Future Volume (veh/h)	2	1582	204	142	1088	3	130	0	207	3	0	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	2	1720	222	161	1236	3	144	0	230	6	0	13
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.90	0.90	0.90	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1666	743	199	2104	5	545	0	217	11	0	24
Arrive On Green	0.00	0.48	0.48	0.11	0.59	0.59	0.16	0.00	0.16	0.02	0.00	0.02
Sat Flow, veh/h	1757	3505	1563	1757	3587	9	3514	0	1398	505	0	1093
Grp Volume(v), veh/h	2	1720	222	161	604	635	144	0	230	19	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	1843	1757	0	1398	1598	0	0
Q Serve(g_s), s	0.1	34.3	6.3	6.5	15.7	15.7	2.6	0.0	11.2	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.1	34.3	6.3	6.5	15.7	15.7	2.6	0.0	11.2	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.32		0.68
Lane Grp Cap(c), veh/h	4	1666	743	199	1028	1081	545	0	217	35	0	0
V/C Ratio(X)	0.52	1.03	0.30	0.81	0.59	0.59	0.26	0.00	1.06	0.54	0.00	0.00
Avail Cap(c_a), veh/h	278	1666	743	278	1028	1081	545	0	217	248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.0	18.9	11.6	31.2	9.4	9.4	26.9	0.0	30.5	34.9	0.0	0.0
Incr Delay (d2), s/veh	48.7	30.9	0.3	8.9	1.0	0.9	0.3	0.0	78.0	12.9	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	23.6	2.8	3.6	7.8	8.2	1.3	0.0	9.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	84.7	49.8	11.9	40.1	10.4	10.4	27.1	0.0	108.5	47.8	0.0	0.0
LnGrp LOS	F	F	B	D	B	B	C		F	D		
Approach Vol, veh/h		1944			1400			374			19	
Approach Delay, s/veh		45.5			13.8			77.2			47.8	
Approach LOS		D			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.8	40.0		5.4	3.8	48.0		15.0
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.5	36.3		2.8	2.1	17.7		13.2
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	16.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	27.5
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	49	0	0	27	37	39	0	476	297	37	0	28	155	3
Future Vol, veh/h	0	2	49	0	0	27	37	39	0	476	297	37	0	28	155	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.69	0.69	0.69	0.92	0.90	0.90	0.90	0.92	0.54	0.54	0.54
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	54	0	0	39	54	57	0	529	330	41	0	52	287	6
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.8	13.3	35.3	15.7
HCM LOS	B	B	E	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	4%	0%	26%	100%	0%
Vol Thru, %	0%	89%	96%	100%	36%	0%	98%
Vol Right, %	0%	11%	0%	0%	38%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	476	334	51	0	103	28	158
LT Vol	476	0	2	0	27	28	0
Through Vol	0	297	49	0	37	0	155
RT Vol	0	37	0	0	39	0	3
Lane Flow Rate	529	371	57	0	149	52	293
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.935	0.595	0.124	0	0.299	0.102	0.533
Departure Headway (Hd)	6.362	5.776	7.896	7.875	7.213	7.084	6.561
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	571	623	452	0	497	504	547
Service Time	4.11	3.524	5.673	5.653	5.271	4.851	4.328
HCM Lane V/C Ratio	0.926	0.596	0.126	0	0.3	0.103	0.536
HCM Control Delay	48.4	16.7	11.8	10.7	13.3	10.7	16.6
HCM Lane LOS	E	C	B	N	B	B	C
HCM 95th-tile Q	11.9	3.9	0.4	0	1.2	0.3	3.1

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	181	194	936	197	213	620
v/c Ratio	0.54	0.46	0.70	0.32	0.38	0.28
Control Delay	32.0	8.4	20.8	12.6	28.8	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	8.4	20.8	12.6	28.8	5.7
Queue Length 50th (ft)	66	0	159	38	39	47
Queue Length 95th (ft)	133	42	266	96	80	83
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	842	765	1878	849	750	2905
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.25	0.50	0.23	0.28	0.21

Intersection Summary
Description: El Dorado Hills Blvd / Harvard Dr

HCM 2010 Signalized Intersection Summary
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	152	163	880	185	185	539
Future Volume (veh/h)	152	163	880	185	185	539
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	181	194	936	197	213	620
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.84	0.84	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	316	254	1601	712	347	2291
Arrive On Green	0.18	0.18	0.46	0.46	0.10	0.65
Sat Flow, veh/h	1757	1411	3597	1559	3408	3597
Grp Volume(v), veh/h	181	194	936	197	213	620
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1559	1704	1752
Q Serve(g_s), s	5.9	8.2	12.5	5.0	3.8	4.7
Cycle Q Clear(g_c), s	5.9	8.2	12.5	5.0	3.8	4.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	316	254	1601	712	347	2291
V/C Ratio(X)	0.57	0.76	0.58	0.28	0.61	0.27
Avail Cap(c_a), veh/h	849	682	1888	840	756	2999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	24.6	12.7	10.7	27.2	4.6
Incr Delay (d2), s/veh	1.6	4.7	0.5	0.3	2.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.5	6.1	2.2	1.9	2.3
LnGrp Delay(d),s/veh	25.3	29.3	13.2	11.0	29.7	4.7
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	375		1133			833
Approach Delay, s/veh	27.4		12.8			11.1
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.4	34.8		15.9		47.2		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	5.8	14.5		10.2		6.7		
Green Ext Time (p_c), s	0.6	14.3		1.1		25.8		

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Queues

9: Olson Ln & El Dorado Hills Blvd

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	38	103	204	1163	732
v/c Ratio	0.12	0.29	0.54	0.45	0.53
Control Delay	23.3	8.0	29.4	6.2	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	8.0	29.4	6.2	17.4
Queue Length 50th (ft)	10	0	53	62	85
Queue Length 95th (ft)	39	34	188	265	256
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	1077	987	724	3271	2692
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.10	0.28	0.36	0.27

Intersection Summary
Description: ED Hills Blvd / Olson Ln

HCM 2010 Signalized Intersection Summary
9: Olson Ln & El Dorado Hills Blvd

10/22/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	33	90	188	1070	655	18
Future Volume (veh/h)	33	90	188	1070	655	18
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	38	103	204	1163	712	20
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.87	0.87	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	167	149	256	2618	1817	51
Arrive On Green	0.09	0.09	0.15	0.75	0.52	0.52
Sat Flow, veh/h	1757	1568	1757	3597	3574	98
Grp Volume(v), veh/h	38	103	204	1163	358	374
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1827
Q Serve(g_s), s	1.1	3.6	6.4	7.1	7.0	7.0
Cycle Q Clear(g_c), s	1.1	3.6	6.4	7.1	7.0	7.0
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	167	149	256	2618	915	953
V/C Ratio(X)	0.23	0.69	0.80	0.44	0.39	0.39
Avail Cap(c_a), veh/h	942	841	633	4037	1248	1301
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	24.9	23.5	2.7	8.2	8.2
Incr Delay (d2), s/veh	0.7	5.9	3.1	0.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.3	3.3	3.4	3.4	3.5
LnGrp Delay(d),s/veh	24.5	30.9	26.5	2.9	8.5	8.5
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	141			1367	732	
Approach Delay, s/veh	29.2			6.4	8.5	
Approach LOS	C			A	A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		47.0		9.9	12.8	34.2		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		9.1		5.6	8.4	9.0		
Green Ext Time (p_c), s		28.9		0.4	0.3	20.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.5
HCM 2010 LOS	A

Promontory Village 7 Traffic Impact Study:

Existing (2025) AM Peak-hour, Plus Project

Calculation Sheets

HCM 2010 TWSC
1: Driveway A & Sophia Pkwy

10/22/2015

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	2	3	108	1	2	301
Future Vol, veh/h	2	3	108	1	2	301
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	4	126	1	2	320

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	455	136	0	0	132	0
Stage 1	131	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	561	910	-	-	1447	-
Stage 1	893	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	555	901	-	-	1440	-
Mov Cap-2 Maneuver	555	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	721	1440	-
HCM Lane V/C Ratio	-	-	0.009	0.001	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	128	36	68	36	17	218
Future Vol, veh/h	128	36	68	36	17	218
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	86	86	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	154	43	79	42	18	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	373	110	0	0	126	0
Stage 1	105	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	626	941	-	-	1454	-
Stage 1	917	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	611	932	-	-	1447	-
Mov Cap-2 Maneuver	611	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	611	932	1447	-
HCM Lane V/C Ratio	-	-	0.252	0.047	0.012	-
HCM Control Delay (s)	-	-	12.9	9.1	7.5	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	0	-

3: Driveway B/Palermo Dr & Alexandra Dr

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	9	31	13	0	101	5	36	0	0	5	0	27
Future Vol, veh/h	9	31	13	0	101	5	36	0	0	5	0	27
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	11	37	16	0	122	6	46	0	0	6	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	58	0	0	219	205	55	202	210	135
Stage 1	-	-	-	-	-	-	72	72	-	130	130	-
Stage 2	-	-	-	-	-	-	147	133	-	72	80	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1446	-	-	1540	-	-	735	690	1009	754	685	911
Stage 1	-	-	-	-	-	-	935	833	-	871	787	-
Stage 2	-	-	-	-	-	-	853	784	-	935	826	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1439	-	-	1533	-	-	696	678	999	742	673	902
Mov Cap-2 Maneuver	-	-	-	-	-	-	696	678	-	742	673	-
Stage 1	-	-	-	-	-	-	923	823	-	860	783	-
Stage 2	-	-	-	-	-	-	816	780	-	923	816	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	10.5	9.3
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	696	1439	-	-	1533	-	-	873
HCM Lane V/C Ratio	0.066	0.008	-	-	-	-	-	0.047
HCM Control Delay (s)	10.5	7.5	-	-	0	-	-	9.3
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

HCM 2010 TWSC
4: Beatty Rd (nth) & Driveway C

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	11	5	2	93	63	4
Future Vol, veh/h	11	5	2	93	63	4
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	69	69	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	14	6	3	135	72	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	220	84	81	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	766	972	1510	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	757	963	1503	-	-	-
Mov Cap-2 Maneuver	757	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	811	-	-
HCM Lane V/C Ratio	0.002	-	0.025	-	-
HCM Control Delay (s)	7.4	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	21	0	0	0	14	0	8	103	0
Future Vol, veh/h	0	0	0	21	0	0	0	14	0	8	103	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	1.00	1.00	1.00	0.92	0.69	0.69	0.69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	27	0	0	0	14	0	12	149	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7	7	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	0%	0%	9%
Vol Thru, %	93%	0%	0%	91%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	21	14	68
LT Vol	8	0	0	6
Through Vol	103	0	0	62
RT Vol	0	21	14	0
Lane Flow Rate	161	27	14	77
Geometry Grp	1	1	1	1
Degree of Util (X)	0.183	0.029	0.015	0.089
Departure Headway (Hd)	4.094	3.885	3.897	4.16
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	875	927	924	856
Service Time	2.127	1.885	1.898	2.211
HCM Lane V/C Ratio	0.184	0.029	0.015	0.09
HCM Control Delay	8	7	7	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	6	62	0
Future Vol, veh/h	0	6	62	0
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	7	70	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.6
HCM LOS	A

Lane

6: Sophia Pkwy & Green Vlly Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	8	781	106	181	1973	153	151	104	4
v/c Ratio	0.05	0.57	0.16	0.61	0.93	0.47	0.46	0.28	0.01
Control Delay	33.6	18.0	4.6	37.8	24.3	28.4	28.2	5.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	18.0	4.6	37.8	24.3	28.4	28.2	5.4	0.0
Queue Length 50th (ft)	3	108	0	54	243	47	46	0	0
Queue Length 95th (ft)	19	247	32	#176	#755	111	109	13	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	336	2023	935	336	2112	359	361	401	478
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.39	0.11	0.54	0.93	0.43	0.42	0.26	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	7	695	94	143	1559	0	228	3	79	0	0	2
Future Volume (veh/h)	7	695	94	143	1559	0	228	3	79	0	0	2
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	8	781	106	181	1973	0	303	0	104	0	0	4
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.76	0.76	0.76	0.50	0.50	0.50
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	15	1629	726	225	2048	0	448	0	178	0	0	8
Arrive On Green	0.01	0.46	0.46	0.13	0.58	0.00	0.13	0.00	0.13	0.00	0.00	0.01
Sat Flow, veh/h	1757	3505	1563	1757	3597	0	3514	0	1395	0	0	1539
Grp Volume(v), veh/h	8	781	106	181	1973	0	303	0	104	0	0	4
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	0	1757	0	1395	0	0	1539
Q Serve(g_s), s	0.3	9.4	2.4	6.2	32.9	0.0	5.1	0.0	4.3	0.0	0.0	0.2
Cycle Q Clear(g_c), s	0.3	9.4	2.4	6.2	32.9	0.0	5.1	0.0	4.3	0.0	0.0	0.2
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	15	1629	726	225	2048	0	448	0	178	0	0	8
V/C Ratio(X)	0.55	0.48	0.15	0.80	0.96	0.00	0.68	0.00	0.59	0.00	0.00	0.48
Avail Cap(c_a), veh/h	325	1953	871	325	2048	0	639	0	254	0	0	280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	30.4	11.3	9.5	26.1	12.2	0.0	25.6	0.0	25.3	0.0	0.0	30.5
Incr Delay (d2), s/veh	16.1	0.3	0.1	6.6	12.4	0.0	1.9	0.0	3.2	0.0	0.0	39.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.6	1.1	3.4	19.2	0.0	2.6	0.0	1.8	0.0	0.0	0.2
LnGrp Delay(d),s/veh	46.5	11.6	9.6	32.7	24.6	0.0	27.5	0.0	28.5	0.0	0.0	69.9
LnGrp LOS	D	B	A	C	C		C		C			E
Approach Vol, veh/h		895			2154			407			4	
Approach Delay, s/veh		11.7			25.3			27.8			69.9	
Approach LOS		B			C			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	34.3		4.1	4.1	41.7		11.6
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.2	11.4		2.2	2.3	34.9		7.1
Green Ext Time (p_c), s	0.1	17.2		0.0	0.0	0.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

7: El Dorado Hills Blvd & Francisco Dr

Intersection	
Intersection Delay, s/veh	26
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	26	0	0	72	63	63	0	344	127	50	0	116	296	3
Future Vol, veh/h	0	2	26	0	0	72	63	63	0	344	127	50	0	116	296	3
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.65	0.65	0.65	0.92	0.87	0.87	0.92	0.92	0.74	0.74	0.74
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	31	0	0	111	97	97	0	395	146	54	0	157	400	4
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	12.3	22.5	28.4	26.1
HCM LOS	B	C	D	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	7%	0%	36%	100%	0%
Vol Thru, %	0%	72%	93%	100%	32%	0%	99%
Vol Right, %	0%	28%	0%	0%	32%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	344	177	28	0	198	116	299
LT Vol	344	0	2	0	72	116	0
Through Vol	0	127	26	0	63	0	296
RT Vol	0	50	0	0	63	0	3
Lane Flow Rate	395	200	33	0	305	157	404
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.819	0.375	0.08	0	0.632	0.327	0.786
Departure Headway (Hd)	7.459	6.744	8.78	8.743	7.471	7.52	7
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	486	535	408	0	484	478	517
Service Time	5.196	4.481	6.536	6.499	5.503	5.256	4.736
HCM Lane V/C Ratio	0.813	0.374	0.081	0	0.63	0.328	0.781
HCM Control Delay	36	13.5	12.3	11.5	22.5	13.9	30.9
HCM Lane LOS	E	B	B	N	C	B	D
HCM 95th-tile Q	7.9	1.7	0.3	0	4.3	1.4	7.2

Queues
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	557	204	386	430	326	956
v/c Ratio	0.82	0.31	0.46	0.75	0.59	0.57
Control Delay	35.8	4.7	27.1	18.5	36.7	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	4.7	27.1	18.5	36.7	15.9
Queue Length 50th (ft)	234	0	86	66	75	168
Queue Length 95th (ft)	330	20	113	134	137	218
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	690	668	1538	830	614	2444
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.31	0.25	0.52	0.53	0.39

Intersection Summary
Description: El Dorado Hills Blvd / Harvard Dr

HCM 2010 Signalized Intersection Summary
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	401	147	320	357	297	870
Future Volume (veh/h)	401	147	320	357	297	870
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	557	204	386	430	326	956
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.72	0.72	0.83	0.83	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	588	472	1257	558	416	1920
Arrive On Green	0.33	0.33	0.36	0.36	0.12	0.55
Sat Flow, veh/h	1757	1411	3597	1557	3408	3597
Grp Volume(v), veh/h	557	204	386	430	326	956
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1557	1704	1752
Q Serve(g_s), s	27.6	10.0	7.1	21.9	8.3	15.2
Cycle Q Clear(g_c), s	27.6	10.0	7.1	21.9	8.3	15.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	588	472	1257	558	416	1920
V/C Ratio(X)	0.95	0.43	0.31	0.77	0.78	0.50
Avail Cap(c_a), veh/h	599	482	1333	592	534	2117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	23.1	20.7	25.4	38.1	12.6
Incr Delay (d2), s/veh	24.2	0.6	0.2	6.3	6.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	4.0	3.5	10.3	4.3	7.4
LnGrp Delay(d),s/veh	53.1	23.7	20.9	31.7	44.9	12.9
LnGrp LOS	D	C	C	C	D	B
Approach Vol, veh/h	761		816			1282
Approach Delay, s/veh	45.3		26.6			21.0
Approach LOS	D		C			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.9	38.1		34.4		55.0		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	10.3	23.9		29.6		17.2		
Green Ext Time (p_c), s	0.6	8.2		0.3		21.7		

Intersection Summary	
HCM 2010 Ctrl Delay	29.0
HCM 2010 LOS	C

Queues
9: Olson Ln & El Dorado Hills Blvd

	↗	↘	↖	↑	↓
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	95	280	60	603	1452
v/c Ratio	0.32	0.57	0.34	0.25	0.69
Control Delay	29.1	8.4	38.4	5.2	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	8.4	38.4	5.2	16.0
Queue Length 50th (ft)	38	0	25	32	215
Queue Length 95th (ft)	65	25	72	118	#581
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	783	843	526	3171	2092
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.33	0.11	0.19	0.69

Intersection Summary

Description: ED Hills Blvd / Olson Ln

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
9: Olson Ln & El Dorado Hills Blvd

10/22/2015

	↗	↘	↖	↑	↓	↙
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	71	210	58	585	1238	40
Future Volume (veh/h)	71	210	58	585	1238	40
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	95	280	60	603	1407	45
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.75	0.75	0.97	0.97	0.88	0.88
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	381	340	76	2287	1884	60
Arrive On Green	0.22	0.22	0.04	0.65	0.54	0.54
Sat Flow, veh/h	1757	1568	1757	3597	3558	111
Grp Volume(v), veh/h	95	280	60	603	710	742
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1825
Q Serve(g_s), s	3.1	11.7	2.3	5.0	21.4	21.5
Cycle Q Clear(g_c), s	3.1	11.7	2.3	5.0	21.4	21.5
Prop In Lane	1.00	1.00	1.00			0.06
Lane Grp Cap(c), veh/h	381	340	76	2287	953	992
V/C Ratio(X)	0.25	0.82	0.79	0.26	0.75	0.75
Avail Cap(c_a), veh/h	779	695	524	3338	1032	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.3	25.7	32.6	5.0	12.0	12.1
Incr Delay (d2), s/veh	0.4	5.3	9.1	0.1	2.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.0	1.3	2.4	11.0	11.5
LnGrp Delay(d),s/veh	22.7	31.0	41.7	5.1	15.0	14.9
LnGrp LOS	C	C	D	A	B	B
Approach Vol, veh/h	375			663	1452	
Approach Delay, s/veh	28.9			8.4	15.0	
Approach LOS	C			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		49.4		19.4	7.5	41.9		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		7.0		13.7	4.3	23.5		
Green Ext Time (p_c), s		34.0		1.2	0.1	13.9		

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Promontory Village 7 Traffic Impact Study:

Existing (2025) PM Peak-hour, Plus Project

Calculation Sheets

HCM 2010 TWSC
1: Driveway A & Sophia Pkwy

10/22/2015

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	2	2	340	3	4	185
Future Vol, veh/h	2	2	340	3	4	185
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	3	343	3	5	218

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	577	355	0	0	351	0
Stage 1	350	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	477	687	-	-	1202	-
Stage 1	711	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	470	680	-	-	1196	-
Mov Cap-2 Maneuver	470	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	800	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	556	1196	-
HCM Lane V/C Ratio	-	-	0.009	0.004	-
HCM Control Delay (s)	-	-	11.5	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

2: Sophia Pkwy

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	69	22	232	128	31	133
Future Vol, veh/h	69	22	232	128	31	133
Conflicting Peds, #/hr	5	5	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	110	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	99	99	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	78	25	234	129	36	156

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	533	309	0	0	369	0
Stage 1	304	-	-	-	-	-
Stage 2	229	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	506	729	-	-	1184	-
Stage 1	746	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	485	722	-	-	1178	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	485	722	1178	-
HCM Lane V/C Ratio	-	-	0.16	0.034	0.031	-
HCM Control Delay (s)	-	-	13.8	10.2	8.2	0
HCM Lane LOS	-	-	B	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.1	-

3: Driveway B/Palermo Dr & Alexandra Dr

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	30	89	41	0	49	5	23	0	0	5	0	18
Future Vol, veh/h	30	89	41	0	49	5	23	0	0	5	0	18
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	78	78	78	78	78	78
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	34	100	46	0	55	6	29	0	0	6	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	66	0	0	151	0	0	269	261	133	258	281	68
Stage 1	-	-	-	-	-	-	195	195	-	63	63	-
Stage 2	-	-	-	-	-	-	74	66	-	195	218	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1529	-	-	1424	-	-	682	642	913	693	626	992
Stage 1	-	-	-	-	-	-	804	737	-	945	840	-
Stage 2	-	-	-	-	-	-	933	838	-	804	721	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1417	-	-	648	622	904	675	606	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	648	622	-	675	606	-
Stage 1	-	-	-	-	-	-	782	717	-	919	836	-
Stage 2	-	-	-	-	-	-	907	834	-	782	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	10.8	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	648	1522	-	-	1417	-	-	894
HCM Lane V/C Ratio	0.046	0.022	-	-	-	-	-	0.033
HCM Control Delay (s)	10.8	7.4	-	-	0	-	-	9.2
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

HCM 2010 TWSC
4: Beatty Rd (nth) & Driveway C

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	7	4	6	64	114	13
Future Vol, veh/h	7	4	6	64	114	13
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	93	93	99	99
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	5	6	69	115	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	209	132	133	0	-	0
Stage 1	127	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	777	915	1446	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	767	906	1439	-	-	-
Mov Cap-2 Maneuver	767	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1439	-	812	-	-
HCM Lane V/C Ratio	0.004	-	0.017	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	0	14	0	0	0	13	0	24	64	0
Future Vol, veh/h	0	0	0	14	0	0	0	13	0	24	64	0
Peak Hour Factor	0.92	0.78	0.78	0.78	0.92	0.41	0.41	0.41	0.92	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	18	0	0	0	32	0	26	69	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.9	7	7.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	0%	0%	9%
Vol Thru, %	73%	0%	0%	91%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	14	13	107
LT Vol	24	0	0	10
Through Vol	64	0	0	97
RT Vol	0	14	13	0
Lane Flow Rate	95	18	32	108
Geometry Grp	1	1	1	1
Degree of Util (X)	0.11	0.019	0.034	0.124
Departure Headway (Hd)	4.173	3.829	3.816	4.127
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	855	940	944	866
Service Time	2.215	1.83	1.816	2.167
HCM Lane V/C Ratio	0.111	0.019	0.034	0.125
HCM Control Delay	7.7	6.9	7	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.1	0.4

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	10	97	0
Future Vol, veh/h	0	10	97	0
Peak Hour Factor	0.92	0.99	0.99	0.99
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	0	10	98	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.8
HCM LOS	A

Lane

Queues
6: Sophia Pkwy & Green Vlly Pkwy

	↗	→	↘	↙	←	↖	↑	↗	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT
Lane Group Flow (vph)	2	1720	241	168	1239	78	78	234	19
v/c Ratio	0.02	1.02	0.29	0.68	0.54	0.32	0.32	0.58	0.08
Control Delay	38.5	48.7	5.8	48.1	11.1	31.7	31.7	10.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	48.7	5.8	48.1	11.1	31.7	31.7	10.5	0.6
Queue Length 50th (ft)	1	334	11	65	84	31	31	0	0
Queue Length 95th (ft)	9	#825	73	#192	395	75	75	56	0
Internal Link Dist (ft)		1190			1064		1244		591
Turn Bay Length (ft)	220		220	230		200		200	
Base Capacity (vph)	281	1693	840	281	2295	308	308	447	369
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	1.02	0.29	0.60	0.54	0.25	0.25	0.52	0.05

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary
6: Sophia Pkwy & Green Vlly Pkwy

10/22/2015

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱		↰	↰	↱		✥	
Traffic Volume (veh/h)	2	1582	222	148	1088	3	140	0	211	3	0	7
Future Volume (veh/h)	2	1582	222	148	1088	3	140	0	211	3	0	7
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	2	1720	241	168	1236	3	156	0	234	6	0	13
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.90	0.90	0.90	0.54	0.54	0.54
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	4	1658	739	207	2111	5	543	0	216	11	0	24
Arrive On Green	0.00	0.47	0.47	0.12	0.59	0.59	0.15	0.00	0.15	0.02	0.00	0.02
Sat Flow, veh/h	1757	3505	1563	1757	3587	9	3514	0	1397	505	0	1093
Grp Volume(v), veh/h	2	1720	241	168	604	635	156	0	234	19	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1563	1757	1752	1843	1757	0	1397	1598	0	0
Q Serve(g_s), s	0.1	34.3	7.0	6.8	15.7	15.7	2.8	0.0	11.2	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	34.3	7.0	6.8	15.7	15.7	2.8	0.0	11.2	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.32		0.68
Lane Grp Cap(c), veh/h	4	1658	739	207	1031	1085	543	0	216	35	0	0
V/C Ratio(X)	0.52	1.04	0.33	0.81	0.59	0.59	0.29	0.00	1.08	0.54	0.00	0.00
Avail Cap(c_a), veh/h	276	1658	739	276	1031	1085	543	0	216	247	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.1	19.1	11.9	31.2	9.4	9.4	27.1	0.0	30.7	35.1	0.0	0.0
Incr Delay (d2), s/veh	48.7	32.5	0.3	10.3	1.0	0.9	0.3	0.0	85.5	12.9	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	23.8	3.1	3.9	7.8	8.2	1.4	0.0	9.5	0.5	0.0	0.0
LnGrp Delay(d),s/veh	84.9	51.6	12.2	41.6	10.3	10.3	27.4	0.0	116.2	48.0	0.0	0.0
LnGrp LOS	F	F	B	D	B	B	C		F	D		
Approach Vol, veh/h		1963			1407			390			19	
Approach Delay, s/veh		46.8			14.0			80.7			48.0	
Approach LOS		D			B			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.1	40.0		5.4	3.8	48.4		15.0
Change Period (Y+Rc), s	3.6	5.7		3.8	3.6	5.7		3.8
Max Green Setting (Gmax), s	11.4	34.3		11.2	11.4	34.3		11.2
Max Q Clear Time (g_c+I1), s	8.8	36.3		2.9	2.1	17.7		13.2
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	16.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.1
HCM 2010 LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	28
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	49	0	0	27	37	39	0	478	298	37	0	28	157	3
Future Vol, veh/h	0	2	49	0	0	27	37	39	0	478	298	37	0	28	157	3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.69	0.69	0.69	0.92	0.90	0.90	0.90	0.92	0.54	0.54	0.54
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	2	54	0	0	39	54	57	0	531	331	41	0	52	291	6
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	2
HCM Control Delay	11.8	13.4	36	16
HCM LOS	B	B	E	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	4%	0%	26%	100%	0%
Vol Thru, %	0%	89%	96%	100%	36%	0%	98%
Vol Right, %	0%	11%	0%	0%	38%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	478	335	51	0	103	28	160
LT Vol	478	0	2	0	27	28	0
Through Vol	0	298	49	0	37	0	157
RT Vol	0	37	0	0	39	0	3
Lane Flow Rate	531	372	57	0	149	52	296
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.94	0.598	0.125	0	0.3	0.102	0.541
Departure Headway (Hd)	6.37	5.784	7.912	7.892	7.227	7.093	6.57
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	568	622	452	0	496	503	548
Service Time	4.121	3.535	5.691	5.671	5.288	4.862	4.339
HCM Lane V/C Ratio	0.935	0.598	0.126	0	0.3	0.103	0.54
HCM Control Delay	49.5	16.8	11.8	10.7	13.4	10.7	16.9
HCM Lane LOS	E	C	B	N	B	B	C
HCM 95th-tile Q	12.1	4	0.4	0	1.2	0.3	3.2

Queues
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

	↙	↖	↑	↗	↘	↓
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	189	194	939	201	213	624
v/c Ratio	0.55	0.45	0.70	0.32	0.38	0.28
Control Delay	32.4	8.3	20.9	12.7	29.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	8.3	20.9	12.7	29.3	5.8
Queue Length 50th (ft)	69	0	161	39	40	48
Queue Length 95th (ft)	137	41	270	99	81	86
Internal Link Dist (ft)	1189		1204			872
Turn Bay Length (ft)				30	200	
Base Capacity (vph)	834	760	1860	842	743	2881
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.26	0.50	0.24	0.29	0.22

Intersection Summary
Description: El Dorado Hills Blvd / Harvard Dr

HCM 2010 Signalized Intersection Summary
8: Harvard Way & El Dorado Hills Blvd

10/22/2015

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↑↑	↱	↰↰	↑↑
Traffic Volume (veh/h)	159	163	883	189	185	543
Future Volume (veh/h)	159	163	883	189	185	543
Number	7	14	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.99	1.00	
Parking Bus, Adj	1.00	0.90	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	189	194	939	201	213	624
Adj No. of Lanes	1	1	2	1	2	2
Peak Hour Factor	0.84	0.84	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	317	255	1602	713	346	2291
Arrive On Green	0.18	0.18	0.46	0.46	0.10	0.65
Sat Flow, veh/h	1757	1411	3597	1559	3408	3597
Grp Volume(v), veh/h	189	194	939	201	213	624
Grp Sat Flow(s),veh/h/ln	1757	1411	1752	1559	1704	1752
Q Serve(g_s), s	6.3	8.3	12.6	5.1	3.8	4.7
Cycle Q Clear(g_c), s	6.3	8.3	12.6	5.1	3.8	4.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	317	255	1602	713	346	2291
V/C Ratio(X)	0.60	0.76	0.59	0.28	0.62	0.27
Avail Cap(c_a), veh/h	847	680	1884	838	754	2992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	24.6	12.7	10.7	27.2	4.6
Incr Delay (d2), s/veh	1.8	4.7	0.5	0.3	2.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.6	6.1	2.2	1.9	2.3
LnGrp Delay(d),s/veh	25.6	29.3	13.2	11.0	29.8	4.7
LnGrp LOS	C	C	B	B	C	A
Approach Vol, veh/h	383		1140			837
Approach Delay, s/veh	27.5		12.8			11.1
Approach LOS	C		B			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.4	34.9		15.9		47.3		
Change Period (Y+Rc), s	6.0	6.0		4.5		6.0		
Max Green Setting (Gmax), s	14.0	34.0		30.5		54.0		
Max Q Clear Time (g_c+I1), s	5.8	14.6		10.3		6.7		
Green Ext Time (p_c), s	0.6	14.4		1.2		26.0		

Intersection Summary			
HCM 2010 Ctrl Delay			14.6
HCM 2010 LOS			B

Queues
9: Olson Ln & El Dorado Hills Blvd

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	45	117	227	1163	742
v/c Ratio	0.14	0.32	0.57	0.45	0.55
Control Delay	23.9	8.0	30.1	6.2	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	8.0	30.1	6.2	17.9
Queue Length 50th (ft)	12	0	61	64	91
Queue Length 95th (ft)	45	36	211	265	260
Internal Link Dist (ft)	990			1636	1166
Turn Bay Length (ft)	90		250		
Base Capacity (vph)	1062	980	714	3269	2623
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.12	0.32	0.36	0.28

Intersection Summary
Description: ED Hills Blvd / Olson Ln

	↗	↘	↖	↑	↓	↙
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑↑	↑↱	
Traffic Volume (veh/h)	39	102	209	1070	655	28
Future Volume (veh/h)	39	102	209	1070	655	28
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	45	117	227	1163	712	30
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.87	0.87	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	186	166	280	2602	1739	73
Arrive On Green	0.11	0.11	0.16	0.74	0.51	0.51
Sat Flow, veh/h	1757	1568	1757	3597	3519	144
Grp Volume(v), veh/h	45	117	227	1163	364	378
Grp Sat Flow(s),veh/h/ln	1757	1568	1757	1752	1752	1818
Q Serve(g_s), s	1.4	4.3	7.4	7.6	7.7	7.7
Cycle Q Clear(g_c), s	1.4	4.3	7.4	7.6	7.7	7.7
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	186	166	280	2602	889	923
V/C Ratio(X)	0.24	0.70	0.81	0.45	0.41	0.41
Avail Cap(c_a), veh/h	901	804	606	3860	1194	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	25.7	24.1	3.0	9.1	9.1
Incr Delay (d2), s/veh	0.7	5.5	3.1	0.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.9	3.8	3.6	3.7	3.9
LnGrp Delay(d),s/veh	25.1	31.2	27.2	3.1	9.5	9.5
LnGrp LOS	C	C	C	A	A	A
Approach Vol, veh/h	162			1390	742	
Approach Delay, s/veh	29.5			7.0	9.5	
Approach LOS	C			A	A	

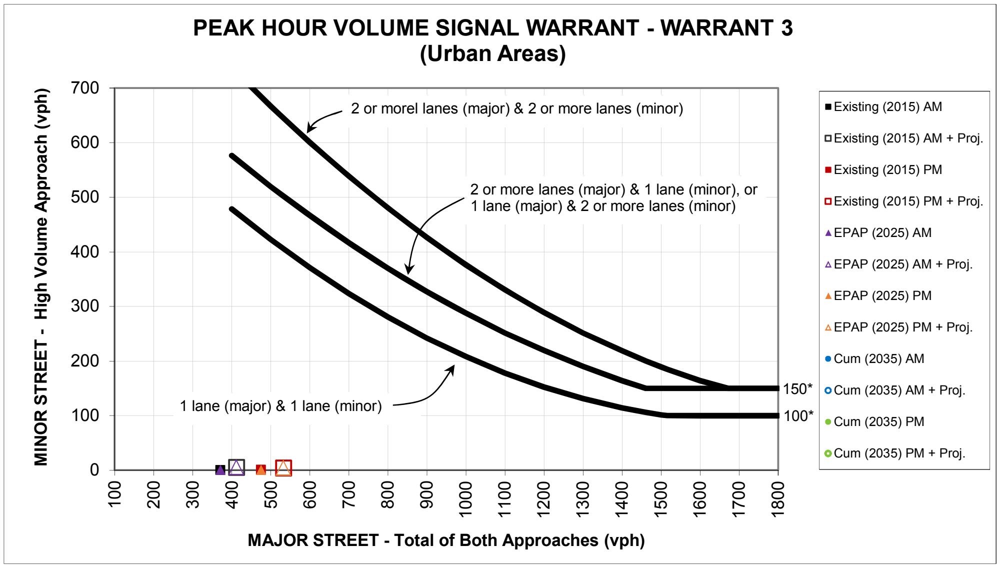
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.7		10.8	14.0	34.7		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		65.5		30.5	20.5	40.5		
Max Q Clear Time (g_c+I1), s		9.6		6.3	9.4	9.7		
Green Ext Time (p_c), s		29.1		0.5	0.3	20.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Appendix C

Calculation Sheets for Traffic Signal Warrants

1 Sophia Pkwy and Access A



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

WARRANT 3 - Part B (Peak Hour Volume)

AM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) AM	Existing (2015) AM + Proj.	EPAP (2025) AM	EPAP (2025) AM + Proj.	Cum (2035) AM	Cum (2035) AM + Proj.
Major Street - Both Approaches	Sophia Pkwy	x		371	412	371	412		
Minor Street - Highest Approach	Access A	x		0	5	0	5		
		Warrant Met?		no	no	no	no		

PM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) PM	Existing (2015) PM + Proj.	EPAP (2025) PM	EPAP (2025) PM + Proj.	Cum (2035) PM	Cum (2035) PM + Proj.
Major Street - Both Approaches	Sophia Pkwy	x		475	532	475	532		
Minor Street - Highest Approach	Access A	x		0	4	0	4		
		Part B Satisfied?		no	no	no	no		

Condition Met? AM (PM)

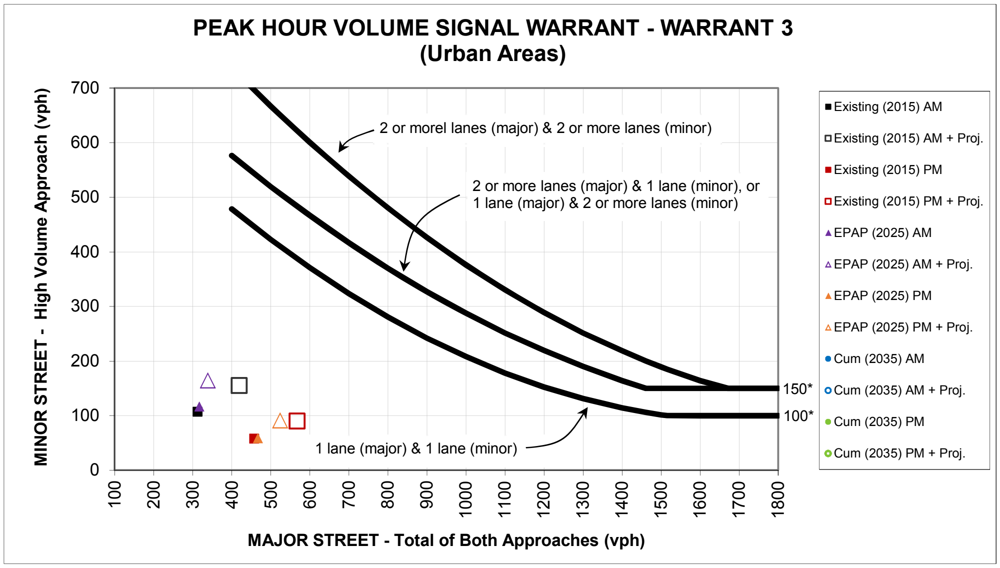
WARRANT 3 - Part A (Peak Hour Delay)

	Approach Lanes	Number of Approaches	Existing (2015)	Existing (2015) + Project	EPAP (2025)	EPAP (2025) + Project	Cum (2035)	Cum (2035) + Project
The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.	1							
The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.	1		no (no)	no (no)	no (no)	no (no)		
The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.		3						
Part A Satisfied?			no (no)	no (no)	no (no)	no (no)		

WARRANT 3 - Part A or Part B must be satisfied

Part A or Part B Satisfied during AM	no	no	no	no		
Part A or Part B Satisfied during PM	no	no	no	no		

2 Sophia Pkwy and Alexandria Dr



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

WARRANT 3 - Part B (Peak Hour Volume)

AM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) AM	Existing (2015) AM + Proj.	EPAP (2025) AM	EPAP (2025) AM + Proj.	Cum (2035) AM	Cum (2035) AM + Proj.
Major Street - Both Approaches	Sophia Pkwy	x		313	418	317	339		
Minor Street - Highest Approach	Alexandria Dr		x	107	155	116	164		
		Warrant Met?		no	no	no	no		

PM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) PM	Existing (2015) PM + Proj.	EPAP (2025) PM	EPAP (2025) PM + Proj.	Cum (2035) PM	Cum (2035) PM + Proj.
Major Street - Both Approaches	Sophia Pkwy	x		458	567	467	524		
Minor Street - Highest Approach	Alexandria Dr		x	57	90	58	91		
		Part B Satisfied?		no	no	no	no		

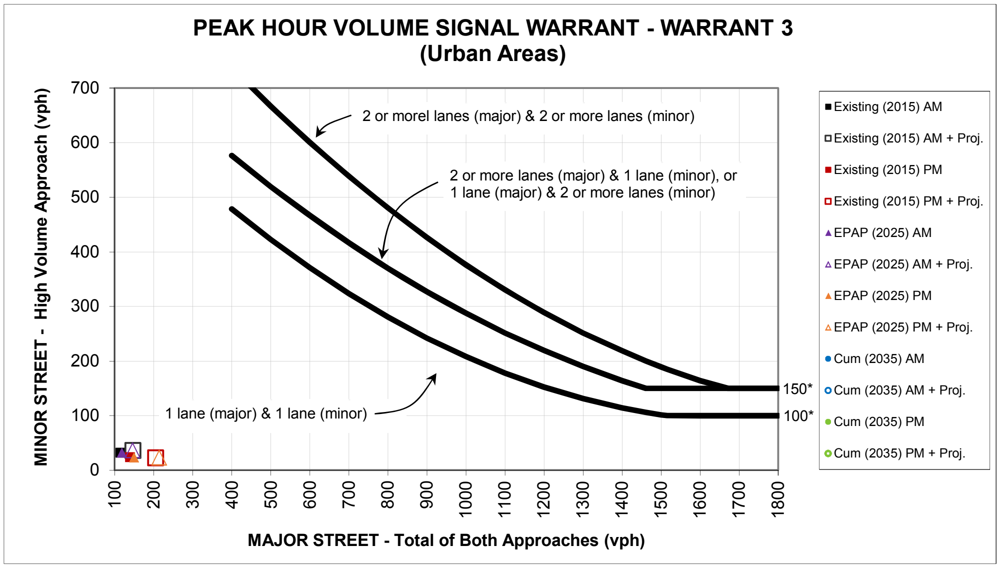
Condition Met? AM (PM)

WARRANT 3 - Part A (Peak Hour Delay)	Approach Lanes	Number of Approaches	Existing (2015)	Existing (2015) + Project	EPAP (2025)	EPAP (2025) + Project	Cum (2035)	Cum (2035) + Project
The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.	2							
The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.	2							
The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.		3	no (no)	no (no)	no (no)	no (no)		
Part A Satisfied?			no (no)	no (no)	no (no)	no (no)		

WARRANT 3 - Part A or Part B must be satisfied

Part A or Part B Satisfied during AM	no	no	no	no		
Part A or Part B Satisfied during PM	no	no	no	no		

3 Alexandria Dr and Access B



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

WARRANT 3 - Part B (Peak Hour Volume)

		Approach Lanes		AM Peak Hour Volumes					
		One	2 or More	Existing (2015) AM	Existing (2015) AM + Proj.	EPAP (2025) AM	EPAP (2025) AM + Proj.	Cum (2035) AM	Cum (2035) AM + Proj.
Major Street - Both Approaches	Alexandria Dr		x	115	146	119	146		
Minor Street - Highest Approach	Access B	x		32	36	32	36		
			Warrant Met?	no	no	no	no		

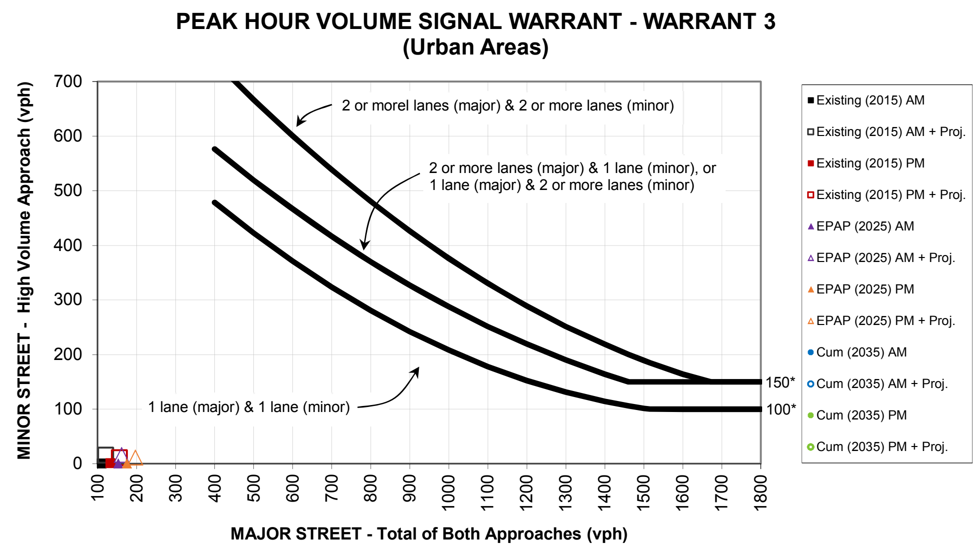
		Approach Lanes		PM Peak Hour Volumes					
		One	2 or More	Existing (2015) PM	Existing (2015) PM + Proj.	EPAP (2025) PM	EPAP (2025) PM + Proj.	Cum (2035) PM	Cum (2035) PM + Proj.
Major Street - Both Approaches	Alexandria Dr		x	140	204	150	214		
Minor Street - Highest Approach	Access B	x		23	23	23	23		
			Part B Satisfied?	no	no	no	no		

WARRANT 3 - Part A (Peak Hour Delay)	Approach Lanes	Number of Approaches	Condition Met? AM (PM) Existing (2015)	Existing (2015) + Project	EPAP (2025)	EPAP (2025) + Project	Cum (2035)	Cum (2035) + Project
The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.	1							
The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.	1							
The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.		4	no (no)	no (no)	no (no)	no (no)		
		Part A Satisfied?	no (no)	no (no)	no (no)	no (no)		

WARRANT 3 - Part A or Part B must be satisfied

Part A or Part B Satisfied during AM	no	no	no	no		
Part A or Part B Satisfied during PM	no	no	no	no		

4 Beatty Dr and Access C



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

WARRANT 3 - Part B (Peak Hour Volume)

AM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) AM	Existing (2015) AM + Proj.	EPAP (2025) AM	EPAP (2025) AM + Proj.	Cum (2035) AM	Cum (2035) AM + Proj.
Major Street - Both Approaches	Beatty Dr			111	120	153	162		
Minor Street - Highest Approach	Access C			0	16	0	16		
Warrant Met?				no	no	no	no		

PM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) PM	Existing (2015) PM + Proj.	EPAP (2025) PM	EPAP (2025) PM + Proj.	Cum (2035) PM	Cum (2035) PM + Proj.
Major Street - Both Approaches	Beatty Dr			133	155	175	197		
Minor Street - Highest Approach	Access C			0	11	0	11		
Part B Satisfied?				no	no	no	no		

Condition Met? AM (PM)

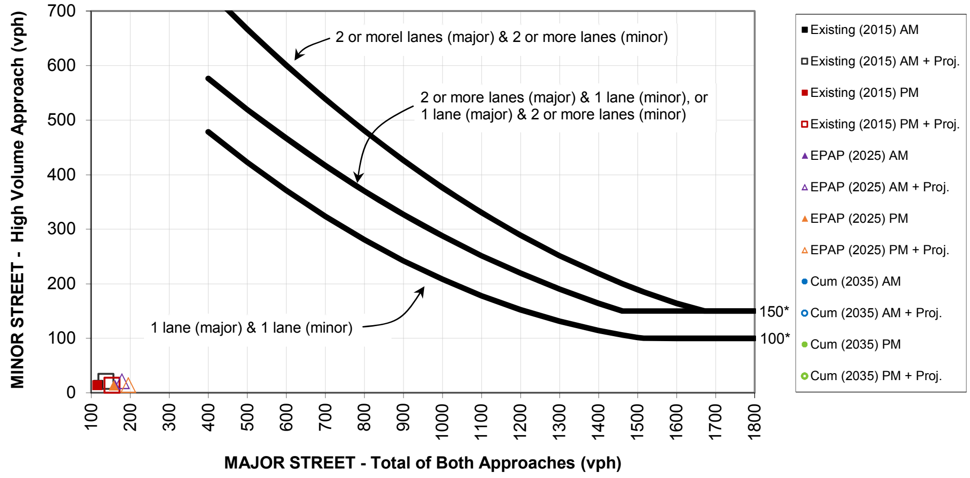
WARRANT 3 - Part A (Peak Hour Delay)	Approach Lanes	Number of Approaches	Existing (2015)	Existing (2015) + Project	EPAP (2025)	EPAP (2025) + Project	Cum (2035)	Cum (2035) + Project
The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.	1							
The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.	1							
The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.		3	no (no)	no (no)	no (no)	no (no)		
Part A Satisfied?			no (no)	no (no)	no (no)	no (no)		

WARRANT 3 - Part A or Part B must be satisfied

Part A or Part B Satisfied during AM	no	no	no	no		
Part A or Part B Satisfied during PM	no	no	no	no		

5 Beatty Dr and Access D

PEAK HOUR VOLUME SIGNAL WARRANT - WARRANT 3
(Urban Areas)



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

WARRANT 3 - Part B (Peak Hour Volume)

AM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) AM	Existing (2015) AM + Proj.	EPAP (2025) AM	EPAP (2025) AM + Proj.	Cum (2035) AM	Cum (2035) AM + Proj.
Major Street - Both Approaches	Beatty Dr			119	137	161	179		
Minor Street - Highest Approach	Access D			14	21	14	21		
			Warrant Met?	no	no	no	no		

PM Peak Hour Volumes

		Approach Lanes One	Approach Lanes 2 or More	Existing (2015) PM	Existing (2015) PM + Proj.	EPAP (2025) PM	EPAP (2025) PM + Proj.	Cum (2035) PM	Cum (2035) PM + Proj.
Major Street - Both Approaches	Beatty Dr			116	153	158	195		
Minor Street - Highest Approach	Access D			13	14	13	14		
			Part B Satisfied?	no	no	no	no		

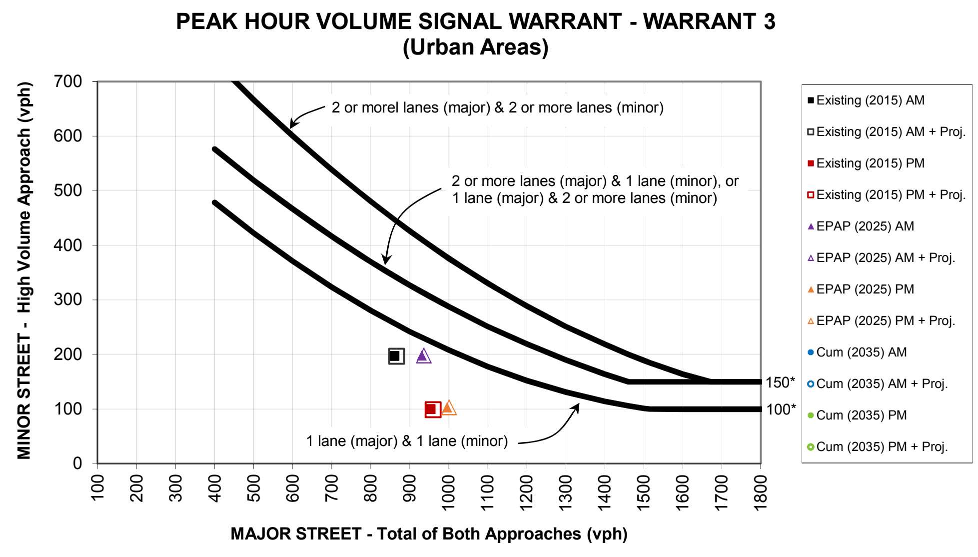
Condition Met? AM (PM)

WARRANT 3 - Part A (Peak Hour Delay)	Approach Lanes	Number of Approaches	Existing (2015)	Existing (2015) + Project	EPAP (2025)	EPAP (2025) + Project	Cum (2035)	Cum (2035) + Project
The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.	1							
The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.	1							
The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.		4	no (no)	no (no)	no (no)	no (no)		
		Part A Satisfied?	no (no)	no (no)	no (no)	no (no)		

WARRANT 3 - Part A or Part B must be satisfied

Part A or Part B Satisfied during AM	no	no	no	no		
Part A or Part B Satisfied during PM	no	no	no	no		

7 El Dorado Hills Blvd and Francisco Dr



* NOTE: 150 vph applies as the lower threshold volume for a minor street approach with 2 or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with 1 lane.

WARRANT 3 - Part B (Peak Hour Volume)

AM Peak Hour Volumes

		Approach Lanes							
		One	2 or More	Existing (2015) AM	Existing (2015) AM + Proj.	EPAP (2025) AM	EPAP (2025) AM + Proj.	Cum (2035) AM	Cum (2035) AM + Proj.
Major Street - Both Approaches	El Dorado Hills Blvd		x	861	866	931	936		
Minor Street - Highest Approach	Francisco Dr	x		197	197	198	198		
		Warrant Met?		no	no	no	no		

PM Peak Hour Volumes

		Approach Lanes							
		One	2 or More	Existing (2015) PM	Existing (2015) PM + Proj.	EPAP (2025) PM	EPAP (2025) PM + Proj.	Cum (2035) PM	Cum (2035) PM + Proj.
Major Street - Both Approaches	El Dorado Hills Blvd		x	954	959	996	1001		
Minor Street - Highest Approach	Francisco Dr	x		99	99	103	103		
		Part B Satisfied?		no	no	no	no		

Condition Met? AM (PM)

WARRANT 3 - Part A (Peak Hour Delay)	Approach Lanes	Number of Approaches	Existing (2015)	Existing (2015) + Project	EPAP (2025)	EPAP (2025) + Project	Cum (2035)	Cum (2035) + Project
The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach.	2		no (yes)	no (yes)	no (yes)	no (yes)		
The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes.	2		yes (yes)	yes (yes)	yes (yes)	yes (yes)		
The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.		4	yes (yes)	yes (yes)	yes (yes)	yes (yes)		
Part A Satisfied?			no (yes)	no (yes)	no (yes)	no (yes)		

WARRANT 3 - Part A or Part B must be satisfied

Part A or Part B Satisfied during AM	no	no	no	no		
Part A or Part B Satisfied during PM	yes	yes	yes	yes		

Appendix D

NCHRP255 Calculation Sheets

```
1       273     98      0       0       98      273     0       0
2       221     76.5    89      25.5    83      291     0       0
3       32      14      94      30.5    0       0       34.5    116
4       61      91.5    0       0       91.5    61      0       0
5       61      113.5   14      6       99.5    55      0       0
6       2       9       1640.5  724.5   243     173     794.5   1773.5
7       415.5   190     197     184     514     832.5   489     409
8       1167    464     547.5   649     666     1267.5  0       0
9       1270.5  647.5   0       0       640     1429.5  254     87.5

+----------------------------------------------------------------------------+
|  Turning Movement Volumes Report                    07:50p  Oct 07, 2015 |
+----------------------------------------------------------------------------+


Counts Data
         Southbound   |    Westbound    |    Northbound   |    Eastbound
 Node   R     T    L  |   R     T    L  |   R     T    L  |   R     T    L
------+---------------+-----------------+-----------------+---------------
    1    0  273    0       0    0    0       0   98    0       0    0    0
    2    0  217    4       7    0   73      17   66    0       0    0    0
    3   27    0    5       5   80    0       0    0    0       0   21    9
    4    0   28    0       0    0    0       0   83    0       0    0    0
    5    0   22    6      14    0    0       0   91    0       0    0    0
    6    2    0    0       0 1327  141      73    3  122      32  551    6
    7    3  236  108      63   63   71      50  125  339     461   26    2
    8    0  810  265     147    0  399     328  309    0       0    0    0
    9   35 1177    0       0    0    0       0  558   44     161    0   60

+----------------------------------------------------------------------------+
|  Furness Adjusted Turning Volumes                   07:50p  Oct 07, 2015 |
+----------------------------------------------------------------------------+

         Southbound   |    Westbound    |    Northbound   |    Eastbound
 Node   R     T    L  |   R     T    L  |   R     T    L  |   R     T    L
------+---------------+-----------------+-----------------+---------------
    1    0  273    0       0    0    0       0   98    0       0    0    0
    2    0  214    7      12    0   76      18   64    0       0    0    0
    3   26    0    5       4   89    0       0    0    0       0   25    9
    4    0   61    0       0    0    0       0   92    0       0    0    0
    5    0   55    6      14    0    0       0  100    0       0    0    0
    6    2    0    0       0 1559   84      29    1  212      88  695    7
    7    3  295  116      62   62   72      44  125  342     465   22    2
    8    0  868  297     147    0  399     351  316    0       0    0    0
    9   36 1238    0       0    0    0       0  585   51     191    0   62

+----------------------------------------------------------------------------+
|  Counts Data Approach & Departure Volumes           07:50p  Oct 07, 2015 |
+----------------------------------------------------------------------------+

        North Leg  |  East Leg  | South Leg  |  West Leg
 Node    App  Dep  |  App  Dep  |  App  Dep  |  App  Dep
------+------------+------------+------------+------------
    1    273   98       0    0      98  273       0    0
    2    221   73      80   21      83  290       0    0
    3     32   14      85   26       0    0      30  107
    4     28   83       0    0      83   28       0    0
    5     28  105      14    6      91   22       0    0
    6      2    9    1468  624     198  173     589 1451
    7    347  190     197  184     514  768     489  405
    8   1075  456     546  593     637 1209       0    0
    9   1212  618       0    0     602 1338     221   79

+----------------------------------------------------------------------------+
|  Model Future Year Approach & Departure Volumes     07:50p  Oct 07, 2015 |
+----------------------------------------------------------------------------+

        North Leg  |  East Leg  | South Leg  |  West Leg
 Node    App  Dep  |  App  Dep  |  App  Dep  |  App  Dep
------+------------+------------+------------+------------
    1    273   98       0    0      98  273       0    0
    2    221 76.5      89 25.5      83  291       0    0
    3     32   14      94 30.5       0    0    34.5  116
    4     61 91.5       0    0    91.5   61       0    0
    5     61113.5      14    6    99.5   55       0    0




    6      2    9   1640.5724.5     243  173   794.51773.5
    7  415.5  190     197  184     514832.5     489  409
    8   1167  464   547.5  649     6661267.5       0    0
    9  1270.5647.5       0    0     6401429.5     254 87.5
```

```
+----------------------------------------------------------------------------+
|  Computed Approach & Departure Volumes            07:50p  Oct 07, 2015 |
+----------------------------------------------------------------------------+

        North Leg  |  East Leg  | South Leg  |  West Leg
 Node    App  Dep  |  App  Dep  |  App  Dep  |  App  Dep
------+------------+------------+------------+------------
    1    273   98       0    0      98  273       0    0
    2    221   77      89   26      83  291       0    0
    3     32   14      94   31       0    0      35  116
    4     61   92       0    0      92   61       0    0
    5     61  114      14    6     100   55       0    0
    6      2    9    1641  725     243  173     795 1774
    7    416  190     197  184     514  833     489  409
    8   1167  464     548  649     666 1268       0    0
    9   1271  648       0    0     640 1430     254   88

+----------------------------------------------------------------------------+
|  Nodes Report                                     07:50p  Oct 07, 2015 |
+----------------------------------------------------------------------------+

Project Nodes
 Node    North Link   |     East Link   |    South Link   |     West Link
------+---------------+-----------------+-----------------+---------------
    1
    2
    3
    4
    5
    6
    7
    8
    9
```

```
1 167 308 0 0 308 167 0 0
2 139 237 39  75.5  298.5 164 0 0
3 23  35  44  80.5  0 0 105.5 57
4 113 62  0 0 62  113 0 0
5 102 69  13  10  56  92  0 0
6 9 5 1188.5  1740.5  287 307.5 1794  1225.5
7 187.5 338.5 99  112 805 675 550 516
8 715 1044  315.5 370.5 1064  680 0 0
9 671 1103.5  0 0 1261.5  746 124 207

+--------------------------------------------------------------------------+
|  Turning Movement Volumes Report                    09:15p  Oct 07, 2015 |
+--------------------------------------------------------------------------+


Counts Data
         Southbound   |    Westbound    |    Northbound   |    Eastbound
 Node   R     T    L  |   R     T    L  |   R     T    L  |   R     T    L
------+---------------+-----------------+-----------------+---------------
    1    0  167    0       0    0    0       0  308    0       0    0    0
    2    0  131    5       6    0   33      61  231    0       0    0    0
    3   18    0    5       5   39    0       0    0    0       0   66   30
    4    0   90    0       0    0    0       0   43    0       0    0    0
    5    0   69   10      13    0    0       0   37    0       0    0    0
    6    6    0    3       3  882  142     207    0   80     136 1339    2
    7    3  154   27      35   37   27      37  257  476     494   48    2
    8    0  539  162     125    0  141     184  844    0       0    0    0
    9   18  653    0       0    0    0       0 1039  170      73    0   28

+--------------------------------------------------------------------------+
|  Furness Adjusted Turning Volumes                   09:15p  Oct 07, 2015 |
+--------------------------------------------------------------------------+

         Southbound   |    Westbound    |    Northbound   |    Eastbound
 Node   R     T    L  |   R     T    L  |   R     T    L  |   R     T    L
------+---------------+-----------------+-----------------+---------------
    1    0  167    0       0    0    0       0  308    0       0    0    0
    2    0  131    6       6    0   32      69  230    0       0    0    0
    3   17    0    5       4   39    0       0    0    0       0   75   30
    4    0  113    0       0    0    0       0   62    0       0    0    0
    5    0   92   10      13    0    0       0   56    0       0    0    0
    6    7    0    1       2 1088  103     157    0  130     204 1582    2
    7    3  155   28      39   36   23      34  297  476     495   49    2
    8    0  527  185     163    0  152     185  880    0       0    0    0
    9   18  655    0       0    0    0       0 1070  188      90    0   33

+--------------------------------------------------------------------------+
|  Counts Data Approach & Departure Volumes           09:15p  Oct 07, 2015 |
+--------------------------------------------------------------------------+

        North Leg  |  East Leg  | South Leg  |  West Leg
```

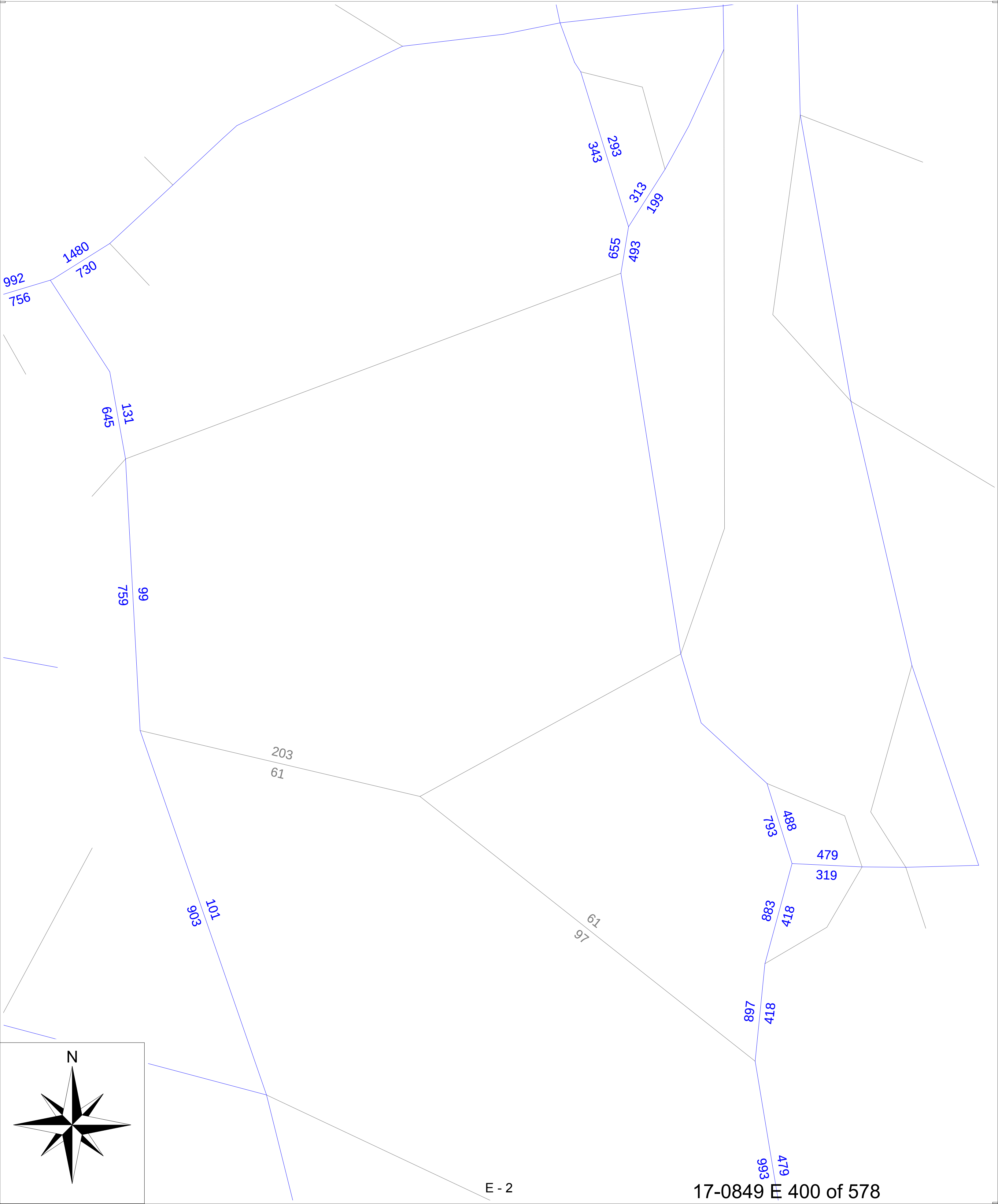
```
 Node    App  Dep  |  App  Dep  |  App  Dep  |  App  Dep
------+------------+------------+------------+------------
    1    167  308       0    0     308  167       0    0
    2    136  237      39   66     292  164       0    0
    3     23   35      44   71       0    0      96   57
    4     90   43       0    0      43   90       0    0
    5     79   50      13   10      37   69       0    0
    6      9    5    1027 1549     287  278    1477  968
    7    184  294      99  112     770  675     544  516
    8    701  969     266  346    1028  680       0    0
    9    671 1067       0    0    1209  726     101  188

+---------------------------------------------------------------------------+
|  Model Future Year Approach & Departure Volumes     09:15p  Oct 07, 2015 |
+---------------------------------------------------------------------------+

        North Leg  |  East Leg  | South Leg  |  West Leg
 Node    App  Dep  |  App  Dep  |  App  Dep  |  App  Dep
------+------------+------------+------------+------------
    1    167  308       0    0     308  167       0    0
    2    139  237      39 75.5   298.5  164       0    0
    3     23   35      44 80.5       0    0   105.5   57
    4    113   62       0    0      62  113       0    0
    5    102   69      13   10      56   92       0    0
    6      9    5   1188.51740.5     287307.5    17941225.5
    7  187.5338.5      99  112     805  675     550  516
    8    715 1044   315.5370.5    1064  680       0    0
    9    6711103.5       0    0   1261.5  746     124  207

+---------------------------------------------------------------------------+
|  Computed Approach & Departure Volumes              09:15p  Oct 07, 2015 |
+---------------------------------------------------------------------------+

        North Leg  |  East Leg  | South Leg  |  West Leg
 Node    App  Dep  |  App  Dep  |  App  Dep  |  App  Dep
------+------------+------------+------------+------------
    1    167  308       0    0     308  167       0    0
    2    139  237      39   76     299  164       0    0
    3     23   35      44   81       0    0     106   57
    4    113   62       0    0      62  113       0    0
    5    102   69      13   10      56   92       0    0
    6      9    5    1189 1741     287  308    1794 1226
    7    188  339      99  112     805  675     550  516
    8    715 1044     316  371    1064  680       0    0
    9    671 1104       0    0    1262  746     124  207

+---------------------------------------------------------------------------+
|  Nodes Report                                       09:15p  Oct 07, 2015 |
+---------------------------------------------------------------------------+

Project Nodes
```

```
 Node    North Link   |     East Link    |    South Link    |     West Link
------+---------------+-----------------+-----------------+---------------
    1
    2
    3
    4
    5
    6
    7
    8
    9
```

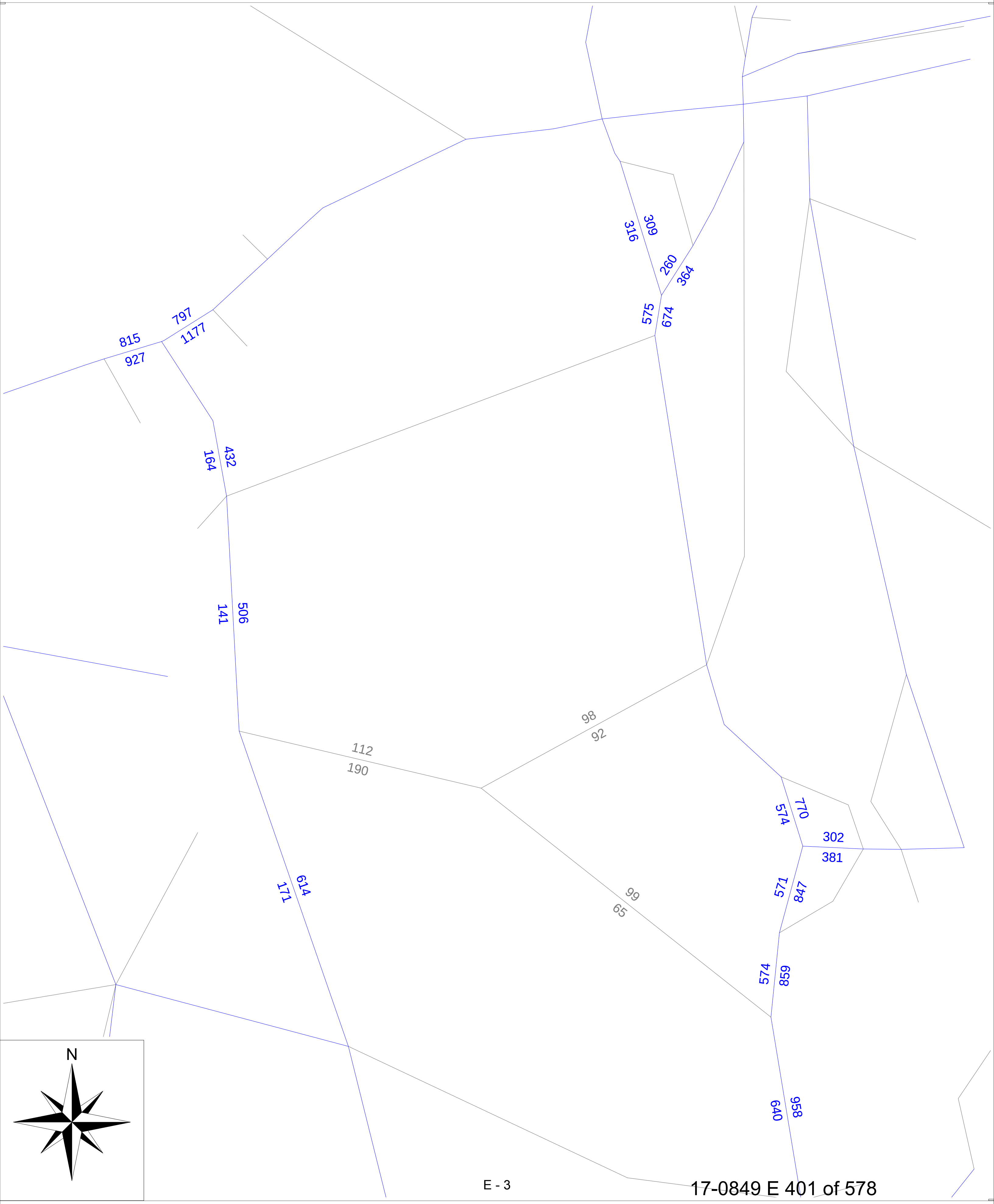
Appendix E

Travel Demand Model Volume Plots

Promontory Village 7
Existing (2015)
AM Peak Hour Link Volumes

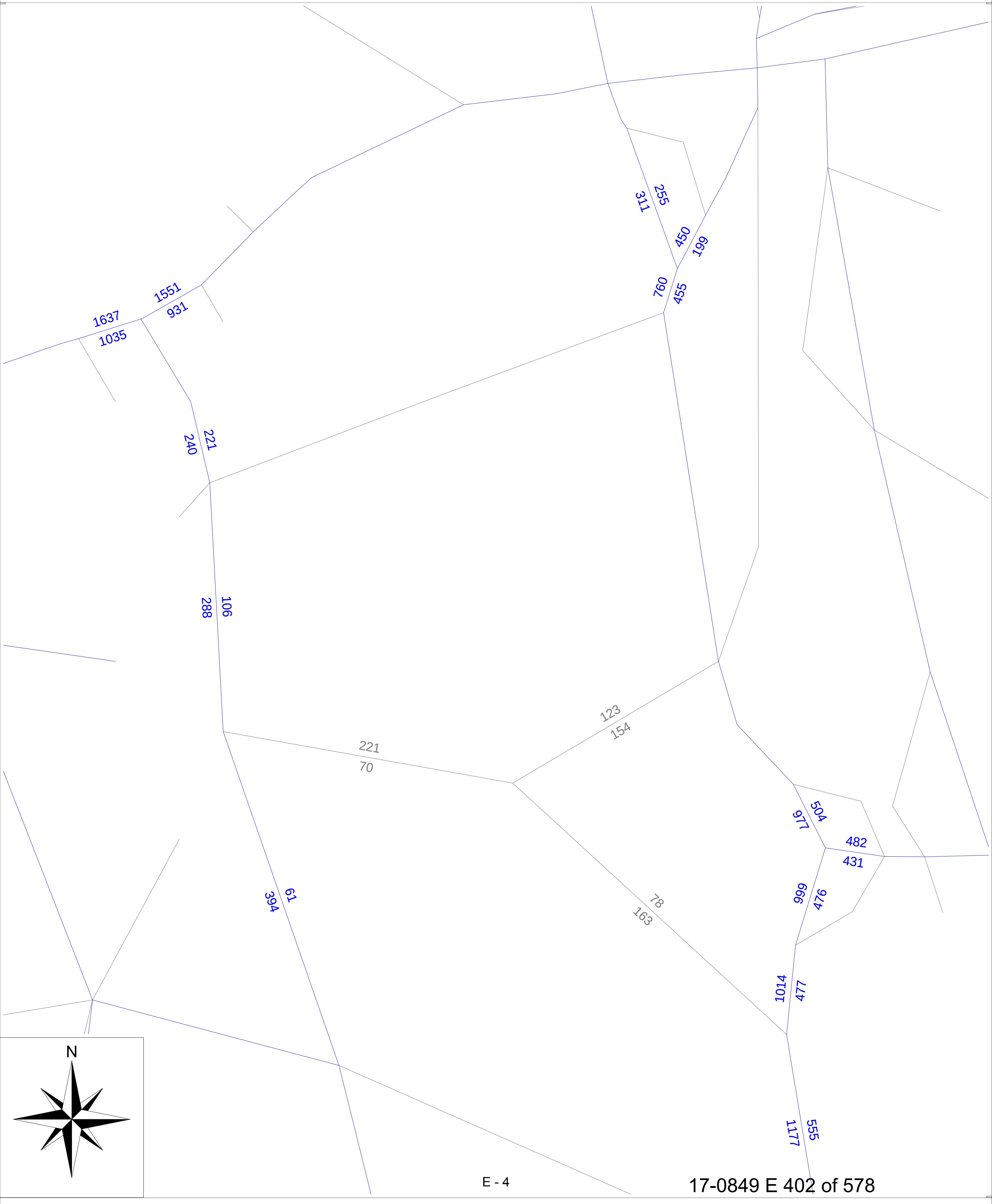


Promontory Village 7
Existing (2015)
PM Peak Hour Link Volumes

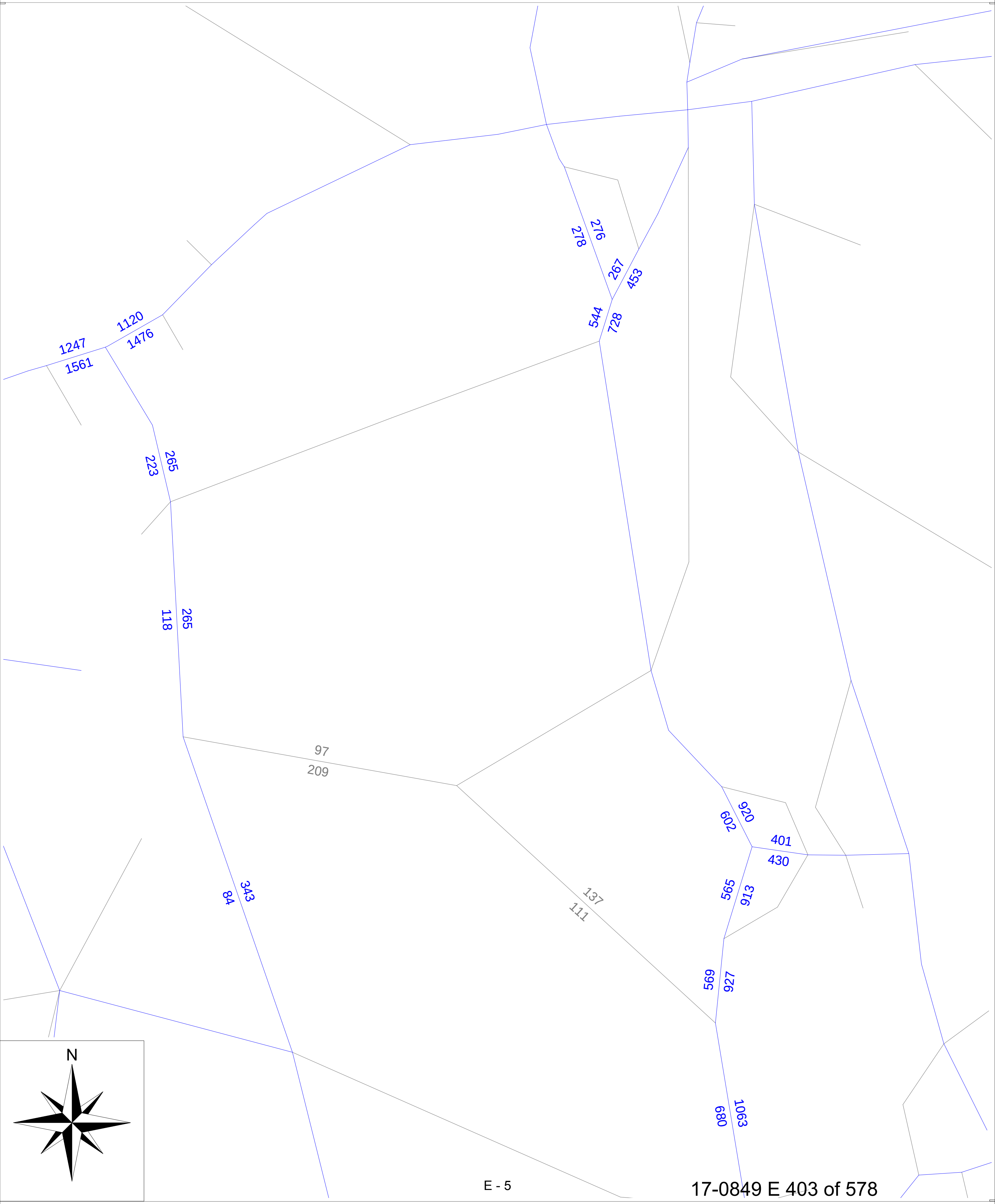


E - 3

Promontory Village 7
Cumulative (2035) without Empire Ranch Interchange
AM Peak Hour Link Volumes



Promontory Village 7
Cumulative (2035) without Empire Ranch Interchange
PM Peak Hour Link Volumes



Environmental Noise Assessment

The Promontory Village 7 Residential Development

El Dorado County, California

BAC Job # 2015-073

Prepared For:

Russell-Promontory, LLC.

AKT Development Corporation

Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard

Paul Bollard, President

March 3, 2016

BOLLARD
Acoustical Consultants

Introduction

Bollard Acoustical Consultants, Inc. was retained by the project applicant to prepare this noise study for the proposed The Promontory Village 7 residential development. The Promontory Village 7 project is located in the western portion of El Dorado County, in the unincorporated community of El Dorado Hills. Specifically, this analysis evaluates the noise impact on residential development generated by traffic on Sophia Parkway, Alexandra Drive, and Beatty Drive. The project area and site plan are shown on Figures 1 and 2, respectively.

Promontory Specific Plan EIR

The Promontory Specific Plan EIR (SCH# 94112056) was certified by the El Dorado County Board of Supervisors on November 4, 1997. The Specific Plan EIR evaluates development of 1,387 residential units at various densities on a total of 999 acres. The development includes commercial uses on 14.5 acres, a school on 10 acres, community and neighborhood parks on 22.8 acres, and a public open space area on 99.8 acres. The Specific Plan EIR identifies significance thresholds for all project impacts and includes specific mitigation measures to address both site-specific and cumulative effects of development. Among other issues, the Specific Plan EIR evaluates the effects of noise resulting from the Specific Plan development.

Proposed mitigation measures were found to reduce the effects of buildout under the Specific Plan to a less than significant level for all noise related issues with the exception of (1) generation of construction noise from construction related equipment, (2) increased noise levels along local arterial roads as identified in the Specific Plan EIR, (3) increased noise levels due to increased traffic to residential areas east of the project site along roads as identified in the Specific Plan EIR and (4) cumulative impacts. These impacts were found to be significant and unavoidable. The Board of Supervisors (Board) adopted Findings of Fact and Statement of Overriding Considerations finding the Specific Plan would have economic, social, and other benefits that render acceptable the significant unavoidable environmental effects associated with the Specific Plan, including significant and unavoidable noise impacts. The impacts to noise were considered significant and unavoidable environmental effects according to the Statement of Overriding Considerations because the Mitigation Measures related to the noise in the Specific Plan EIR would not guarantee the full avoidance of all significant noise effects (County of El Dorado 1997).

The County's actions to approve the Specific Plan and certify the Specific Plan EIR were subject to litigation and a subsequent settlement agreement. Based on the settlement agreement, the applicant reduced the residential dwelling unit densities allowed under the Specific Plan from 1387 units to 1100 units (County of El Dorado 1999). Other minor changes to the Specific Plan were proposed to reduce environmental impacts. The County prepared an addendum to the 1997 EIR.

On September 28, 1999, the Board of Supervisors adopted the findings proposed by staff and approved the Specific Plan amendments. The Notice of Determination (NOD) for the addendum was filed October 6, 1999. In conjunction with the approval of the amended Specific Plan and certification of the Specific Plan EIR Addendum, a Mitigation Monitoring and Reporting Program (MMRP) was prepared and adopted. The MMRP is a binding document and would be applicable to the Village 7 development. The Specific Plan noise reduction measures contained in the Promontory Specific Plan MMRP, which the Village 7 residential development is required to implement, include measures that reduce the noise generated during both construction and operations of the development. An outline of the mitigation measures is provided later in this report.

Noise Fundamentals and Terminology

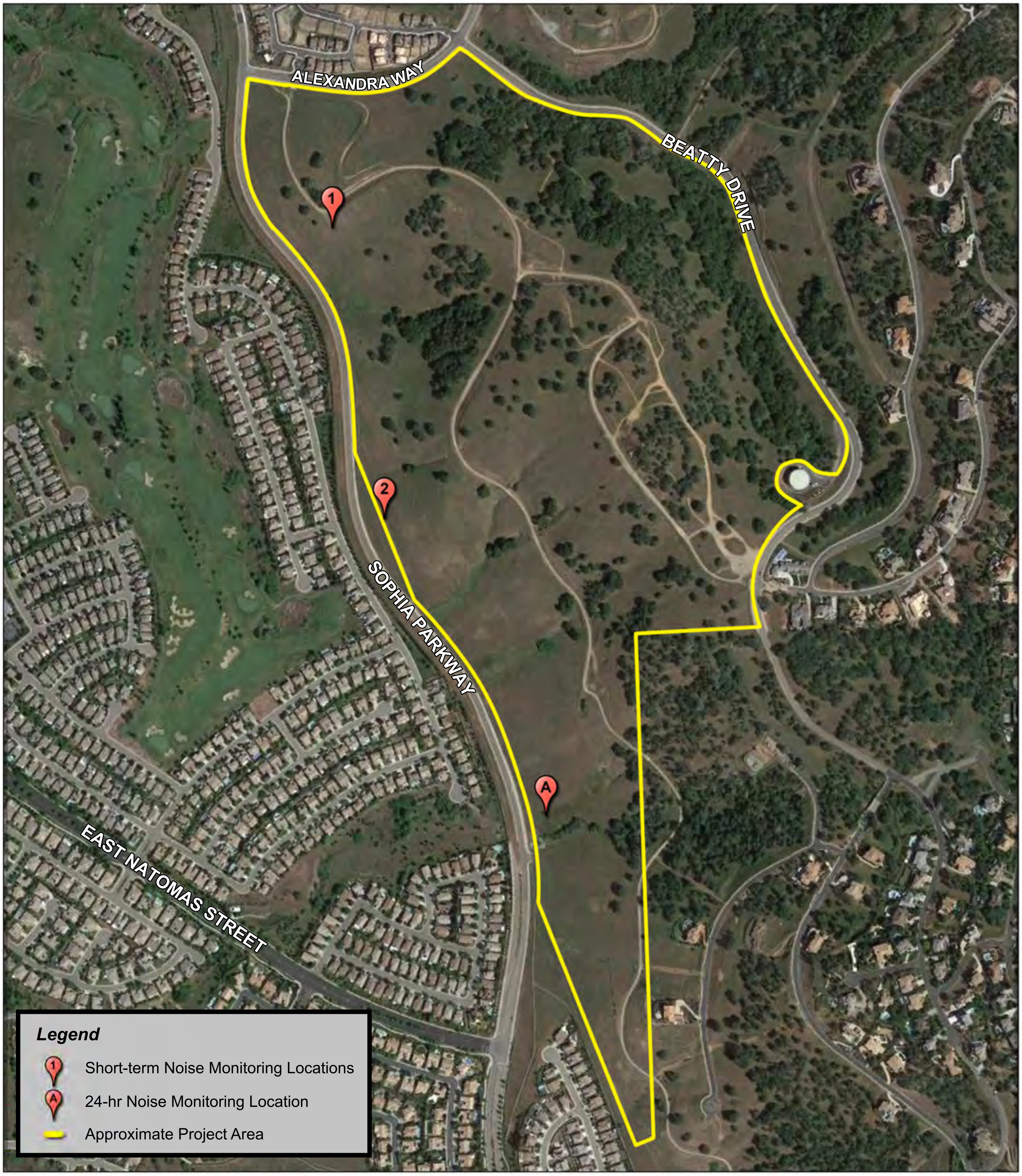
Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and thus are called sound. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. As a result, the decibel scale was devised. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. Appendix A contains definitions of Acoustical Terminology. Figure 3 shows common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighing network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

Figure 1

Project Area and Noise Measurement Locations
The Promontory Village 7 - El Dorado County, California

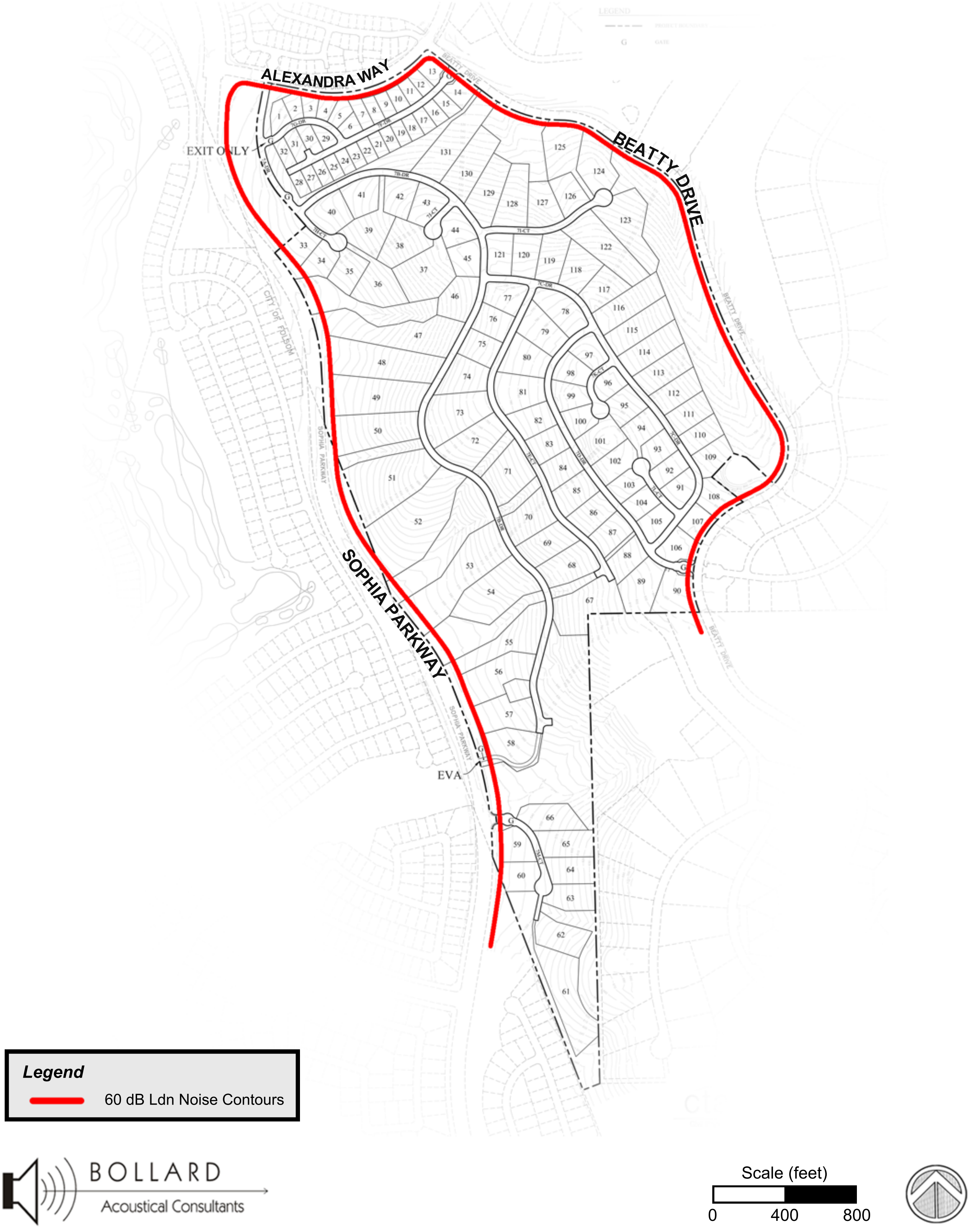


BOLLARD
Acoustical Consultants

Scale (feet)
0 500 1000

Figure 2

Proposed Site Plan and 60 dB Ldn Noise Contours
The Promontory Village 7 - El Dorado County, California



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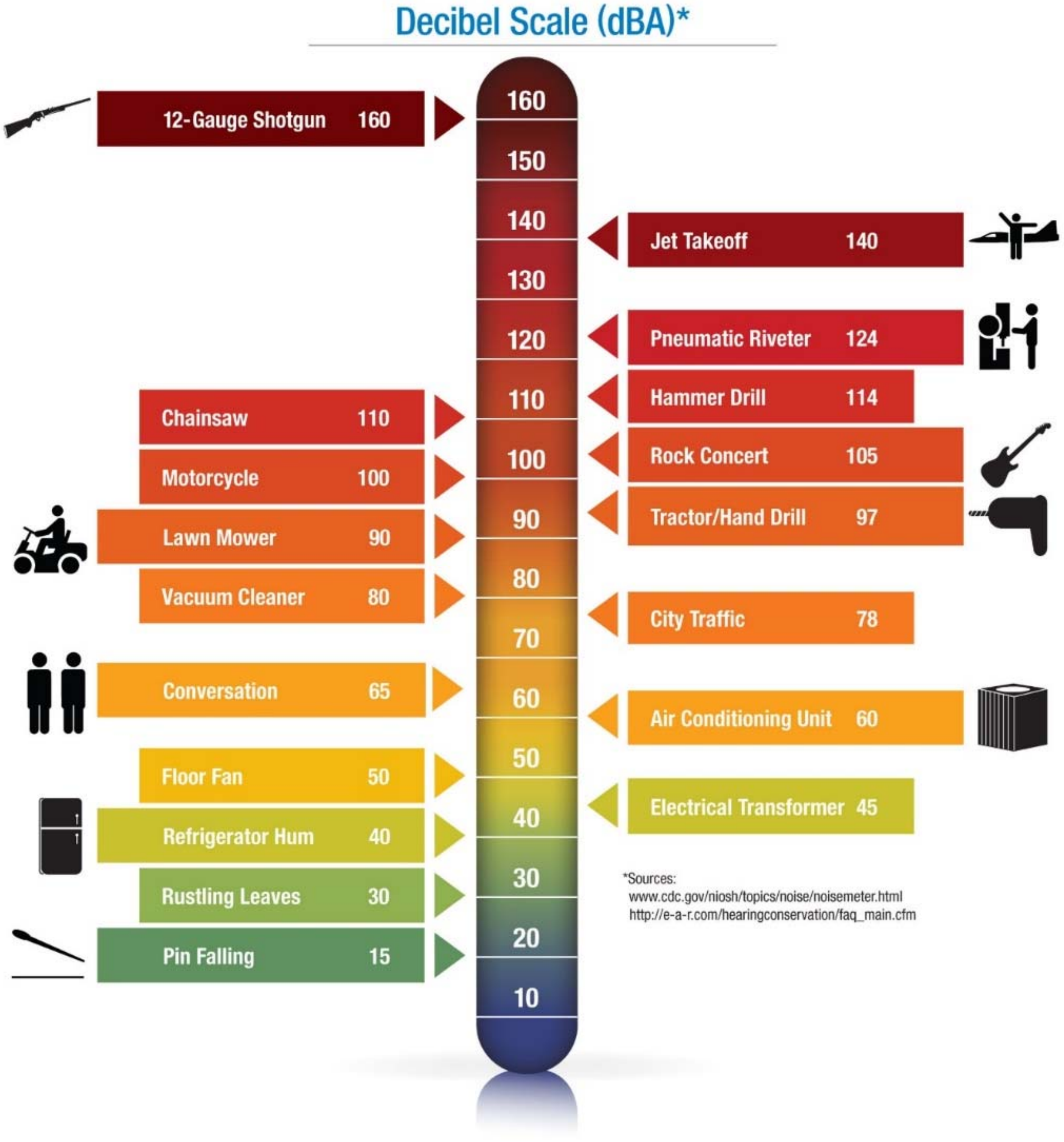
Acoustical Consultants

Figure 3
Typical A-Weighted Sound Levels of Common Noise Sources



*Sources:
www.cdc.gov/niosh/topics/noise/noisemeter.html
http://e-a-r.com/hearingconservation/faq_main.cfm

Criteria for Acceptable Noise Exposure

El Dorado County General Plan

The Noise Element of the El Dorado County General Plan contains policies to ensure that County residents are not subjected to noise beyond acceptable levels. The specific General Plan noise policies which are applicable to this evaluation are as follows:

Policy 6.5.1.1: Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6-1 or the performance standards of table 6-2, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.3: Where noise mitigation measures are required to achieve the standards of tables 6-1 and 6-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

Policy 6.5.1.8: New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-1.

Table 6-1
Maximum Allowable Noise Exposure for Transportation Noise Sources
(El Dorado County General Plan Noise Element)

		Interior Spaces	
Land Use	**Outdoor Activity Areas[1] Ldn/CNEL, dB**	**Ldn/CNEL, dB**	**Leq, dB[2]**
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60[3]	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes:

[1] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L_{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L_{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Promontory Specific Plan Noise Impacts and Mitigation Measures

Mitigation measures adopted to minimize noise impacts from the Specific Plan Final EIR are summarized and discussed relevant to development of the Promontory Village 7 Project below.

Impact 4.7.1: Construction of necessary infrastructure improvements, the village center, and the residential units would temporarily increase noise levels in nearby areas. This would be a temporary significant unavoidable impact.

MM 4.7.1a: Construction activities shall be limited to the hours of 7:00 a.m. to 6 p.m. on weekdays and the hours of 8:00 a.m. to 5 p.m. on Saturday and Sunday.

MM 4.7.1b: Locate fixed construction equipment such as compressors and generators as far as feasibly possible from sensitive receptors. Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power construction equipment.

Significance After Mitigation

Significant and unavoidable, but only for the duration of the construction

Impact 4.7.2: Upon project buildout, subsequent local traffic increases would increase noise levels along local arterial roads. P.M. peak hour noise levels would increase along segments of Green Valley Road, Francisco Drive, East Natoma Street, and El Dorado Hills Boulevard, exposing existing residents to excessive noise levels. This would be a significant unavoidable impact.

MM 4.7.2: Since the identified noise impacts are an offsite consequence of project implementation, no feasible project related mitigation measures are available.

Significance After Mitigation

Significant and unavoidable

Impact 4.7.3: Resultant traffic along the proposed Russell Ranch Boulevard extension would expose residents of Shadowfax subdivision and Amys Lane to excessive noise levels. This would be a significant impact.

MM 4.7.3: The County shall require:

- *that speed along Russell Ranch Boulevard in the area of Shadowfax and Amys Lane be posted at no higher than 30 mph (assumes posted speed limit exceedance by 5 mph and subsequently assures compliance with mitigation); and*

- *that a 4-foot earthen berm be constructed adjacent the west side of Russell Ranch Boulevard blocking line of site between Residence #1 through #3 and Russell Ranch Boulevard.*

Significance After Mitigation

Less than significant

Impact 4.7.4: Upon project buildout, subsequent local traffic increases would increase noise levels in residential areas east of the project site. Peak hour noise levels would increase along segments of Hensley Circle, Warren Lane, Governor Drive, Gillett Drive, Olson Lane, Ridgeview Drive, Wilson Boulevard, and Julie Ann Way. This increase would expose existing residents to noise levels exceeding the noise impact significance threshold criteria. This would be a significant unavoidable impact.

MM 4.7.4: This mitigation measure would result in the restriction of traffic volumes along Olson Lane and Ridgeview Drive to 4,000 average daily trips. This would reduce both roadways' anticipated noise levels under existing plus project conditions to 59dB, which would result in a less-than-significant impact to Olson Lane and Ridgeview Drive.

However, no feasible mitigation has been identified for significant impacts to the following residential roadways.

Existing conditions:

1) *Hensley Circle (from the Promontory access to Warren Lane),*

2) *Warren Lane (from Hensley Circle to Governor Drive),*

3) *Governor Drive (from Warren Lane to El Dorado Hills Blvd.),*

4) *Gillett Drive(from Ridgeview Drive to Olson Lane),*

5) *Wilson Boulevard(from Ridgeview Drive to El Dorado Hills Blvd.0, and*

6) *Julie Ann Way(from Powers Drive to Beatty Drive)*

Cumulative conditions:

1) *Hensley Circle (from the Promontory access to Warren Lane),*

3) *Governor Drive (from Warren Lane the El Dorado Hills Blvd), and*

4) *Gillett Drive (from Ridgeview Drive to Olson Lane)*

Significance After Mitigation

Significant and unavoidable for Hensley Circle, Warren Lane, Governor Drive, Gillett Drive, Wilson Boulevard, and Julie Ann Way.

Impact 4.7.5: Project generated vehicle traffic would create noise levels along the Russell Ranch Boulevard extension, community collector, and village collector roads that could potentially exceed the noise/land use performance standards outlined in the General Plan and impact future residences of the Promontory Specific Plan. This would be potentially significant impact.

MM 4.7.5: Prior to County approval of tentative subdivision maps, project applicants shall demonstrate compliance with the transportation noise compatibility requirements outlined in the El Dorado County General Plan Noise Element. Applicants shall demonstrate compliance through noise modeling and/or noise monitoring using approved methods and equipment. Future mitigation measures shall use Best Available Control Technology (BACT), with the use of noise barriers as a last feasible means of mitigation. Housing setbacks are the preferred mitigation method.

Significance After Mitigation

Less than significant.

Existing Ambient Noise Environment

The ambient noise environment in the immediate project vicinity is primarily defined by traffic on Sophia Parkway. To quantify the existing ambient noise environment in the project vicinity, short-term (15-minute) and long-term (24-hr) noise level measurements were conducted at the project site on November 5, 2015. The noise measurement locations are shown on Figure 1.

Larson-Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used to complete the noise level measurement surveys. The meters were calibrated before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy off the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4). The long-term noise level measurement survey results are summarized below in Table 1, with the detailed results of the long-term measurements contained in Appendix B and C.

Table 1
Summary of Long-Term Ambient Noise Measurement Results
The Promontory Village 7 – November 5, 2015

Noise Level Metric	Average Hourly Noise Level (Range), dB Daytime	 Nighttime
L_{eq}	56 (54-59)	48 (40-53)
L_{max}	71 (65-75)	66 (62-73)
L_{dn}	57	

Source: Bollard Acoustical Consultants, Inc. 2015

Evaluation of Future Traffic Noise Levels

Traffic Noise Prediction Methodology

The Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA-RD-77-108) with the Calveno vehicle noise emission curves was used to predict traffic noise levels at the project site. The FHWA Model is the traffic noise prediction model preferred by the Federal Highway Administration and the State of California Department of Transportation (Caltrans) for use in traffic noise assessment.

Traffic Noise Prediction Model Calibration

The FHWA Model provides reasonably accurate traffic noise predictions under “ideal” roadway conditions. Ideal conditions are generally considered to be long straight roadway segments with uniform vehicle speeds, a flat roadway surface, good pavement conditions, a statistically large volume of traffic, and an unimpeded view of the roadway from the receiver location. Such conditions did not appear to be in effect at this project site due to the variable topography. Therefore, BAC conducted careful calibrations of the FHWA Model through site-specific traffic noise level measurements and concurrent traffic counts on Sophia Parkway. This calibration process was performed at two locations on the project site adjacent to Sophia Parkway on November 5, 2015. The traffic noise measurement locations are shown on Figure 2. The detailed results of this procedure are provided in Appendices D1 and D2.

The Appendix D data indicates that the FHWA Model predicted future Sophia Parkway traffic noise levels within 2 dB. As a result, no calibration adjustment was applied to the FHWA Model for the prediction of future Sophia Parkway traffic noise levels.

Predicted Future Exterior Traffic Noise Levels at the Project Site

The FHWA Model was used with future 2035 traffic data to predict future traffic noise levels at the nearest noise-sensitive interior and exterior areas adjacent to Sophia Parkway, Alexandra Drive, and Beatty Drive, including the calibration adjustments described in the previous section. The FHWA Model inputs and predicted future traffic noise levels at the project site are shown in Appendices E1 – E3. The predicted future traffic noise levels are summarized below in Table 2.

Table 2
Predicted Future Traffic Noise Levels at the Nearest Noise-Sensitive Areas[1]
The Promontory Village 7 – El Dorado County, California

Roadway	Lot No. of Nearest Backyards	Distance From Centerline (feet)	Predicted Noise Level (L_{dn}, dB)
Sophia Parkway	33	100	60
	47 - 53	280	53
	56 - 58	180	56
	59 - 61	100	60
Alexandra Drive	2 - 5	75	58
Beatty Drive	106 - 108	55	60

Notes:

[1] A complete listing of FHWA Model inputs and results are provided in Appendix E.

Source: Bollard Acoustical Consultants, Inc. (2015)

The Table 2 data indicate that future traffic noise levels will not exceed the County's 60 dB Ldn standard in The Promontory Village 7 residences located along Sophia Parkway, Alexandra Drive, and Beatty Drive. Furthermore, exiting topography and retaining walls will provide additional noise level reduction. As a result, no further noise mitigation measures would be warranted for this aspect of the project.

Predicted Future Interior Traffic Noise Levels

Table 2 data indicates that the worst-case exterior noise exposure of 60 dB L_{dn} would be at Lots 33, 59-61 and Lots 106-108. To achieve compliance with the El Dorado County interior standard of 45 dB L_{dn}, an exterior-to-interior noise reduction of at least 15 dB would be required of the building facades located on lots adjacent to Sophia Parkway, Alexandra Drive, and Beatty Drive.

Standard residential construction (wood siding, STC-27 windows, door weather-stripping, exterior wall insulation, composition plywood roof), results in an exterior to interior noise reduction of at least 25 dB with windows closed and approximately 15 dB with windows open. Therefore, standard construction would be acceptable for this project at all residences of this development. Nonetheless, mechanical ventilation should be provided to allow occupants to close doors and windows as desired for acoustical isolation.

Conclusions

The Promontory Specific Plan EIR evaluated development on all the properties within the 999-acre Specific Plan area at the program level and included specific mitigation measures to address both site specific and cumulative effects of development. The Specific Plan establishes detailed land use and residential density standards, design standards for residential and nonresidential development, a circulation plan, and environmental protection standards. The Specific Plan EIR identifies significance thresholds for all project impacts and includes a comprehensive set of mitigation measures to reduce the potential effects of development on noise, among other issues. An MMRP was prepared and adopted with the Specific Plan. The MMRP is a binding document and would be applicable to the Village 7 development.

Mitigation Measures 4.7.1a and 4.7.1b shall be implemented during construction. These two mitigation measures should be included as Conditions of Approvals for this project.

Mitigation Measure 4.7.2 has been satisfied since there is no feasible project related mitigation measures available. There would not be a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

Mitigation Measure 4.7.3 has been satisfied with the construction of Russell Ranch Boulevard (Sophia Parkway) adjacent to the residents of Shadowfax subdivision and Amys Lane. This mitigation measure is not applicable to the project since Russell Ranch Boulevard (Sophia Parkway) is not being proposed as part of this project.

Mitigation Measure 4.7.4 restricts traffic volumes along Olson Lane and Ridgeview Drive to 4,000 average daily trips (ADT) for noise impacts. This Mitigation Measure will be implemented through Mitigation Measure 4.5.1a for the transportation and circulation element. Based upon information provided from the traffic study. The ADT for both Olson Lane and Ridgeview Drive are less than 4000 ADT’s for the project. Therefore, no further analysis is required and this Mitigation Measure has been satisfied. There would not be a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

Mitigation Measure 4.7.5 requires the applicant to submit a noise study with each tentative subdivision map identifying anticipated noise levels, compatibility with El Dorado County General Plan standards, and mitigation to ensure General Plan consistency. This noise study satisfies the requirements of Mitigation Measure 4.7.5. The County will review the noise study prior to tentative map approval.

The Village 7 development consists of a land use mix consistent with the Promontory Specific Plan; no Specific Plan amendment is required. As demonstrated with the assessment, the development complies with the requirements of the EIR. Therefore, since the Village 7 development is consistent with the requirements of the EIR and consists of land uses analyzed in the Specific Plan EIR, noise associated with Village 7 development would be the same as analyzed in the Specific Plan EIR and there would not be an increase in the severity of noise impacts. There would not be a new or substantially more severe significant impact compared with the significance determination contained in the Specific Plan EIR.

These conclusions are based on the traffic study provided by project applicant, the traffic assumptions cited in the report appendices, and on noise reduction data for standard residential dwellings. Deviations from the Appendix E data, or the project site plan shown in Figure 2, could cause future traffic noise levels to differ from those predicted in this analysis. In addition, Bollard Acoustical Consultants, Inc. is not responsible for degradation in acoustic performance of the residential construction due to poor construction practices, failure to comply with applicable building code requirements, or for failure to adhere to the minimum building practices cited in this report.

This concludes BAC's noise assessment for The Promontory Village 7 residential development located in El Dorado County, California. Please contact BAC at (916) 663-0500 or paulb@bacnoise.com with any questions regarding this assessment.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.

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Appendix B
The Promontory Village 7
Ambient Noise Monitoring Results - Site A
Thursday, November 5, 2015 - Friday, November 6, 2015

Hour	Leq	Lmax	L50	L90
15:00	56	69	53	39
16:00	56	71	52	39
17:00	56	65	55	43
18:00	59	69	58	49
19:00	57	69	55	45
20:00	55	74	53	42
21:00	54	68	47	39
22:00	53	73	45	38
23:00	50	71	40	36
0:00	47	64	37	35
1:00	42	63	36	34
2:00	42	63	37	35
3:00	48	73	37	36
4:00	40	62	37	34
5:00	43	65	37	35
6:00	48	65	39	37
7:00	55	75	48	40
8:00	57	73	54	45
9:00	57	73	53	42
10:00	55	72	47	39
11:00	56	73	51	42
12:00	56	72	53	44
13:00	58	74	55	46
14:00	56	73	53	44

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	59	54	56	53	40	48
Lmax (Maximum)	75	65	71	73	62	66
L50 (Median)	58	47	52	45	36	38
L90 (Background)	49	39	43	38	34	36

Computed Ldn, dB	57
% Daytime Energy	92%
% Nighttime Energy	8%

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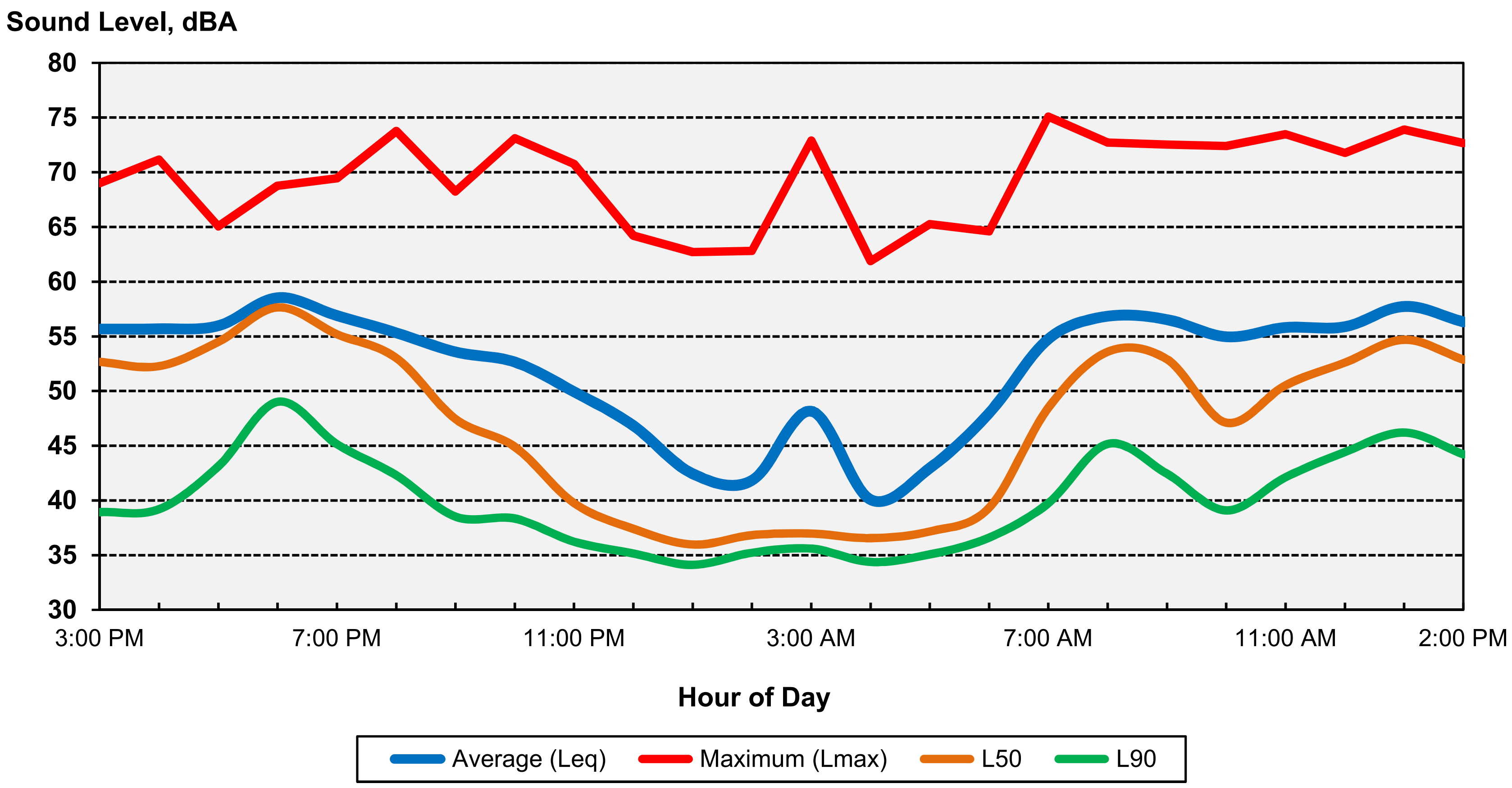
Appendix C
The Promontory Village 7
Ambient Noise Monitoring Results - Site A
Thursday, November 5, 2015 - Friday, November 6, 2015



Ldn: 57 dB

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Appendix D-1

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) Calibration Worksheet

Project Information:

Job Number: 2015-073
Project Name: The Promontory Village 7
Roadway Tested: Sophia Parkway
Test Location: Site 1
Test Date: November 5, 2015

Weather Conditions:

Temperature (Fahrenheit): 63
Relative Humidity: 32%
Wind Speed and Direction: Calm
Cloud Cover: Partly Cloudy

Sound Level Meter:

Sound Level Meter: LDL Model 820 (BAC #8)
Calibrator: LDL Model CAL200
Meter Calibrated: Immediately before
Meter Settings: A-weighted, slow response

Microphone:

Microphone Location: On project site
Distance to Centerline (feet): 260
Microphone Height: 5 feet above ground
Intervening Ground (Hard or Soft): **Soft**
Elevation Relative to Road (feet): 72

Roadway Condition:

Pavement Type Asphalt
Pavement Condition: Good
Number of Lanes: 2
Posted Maximum Speed (mph): 50

Test Parameters:

Test Time: 2:51 PM
Test Duration (minutes): 15
Observed Number Automobiles: 99
Observed Number Medium Trucks: 2
Observed Number Heavy Trucks: 1
Observed Average Speed (mph): 53

Model Calibration:

Measured Average Level (L_{eq}): 56.8
Level Predicted by FHWA Model: 54.5
Difference: -2.3 dB

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Appendix D-2

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Calibration Worksheet

Project Information:
Job Number: 2015-073
Project Name: The Promontory Village 7
Roadway Tested: Sophia Parkway
Test Location: Site 2
Test Date: November 5, 2015

Weather Conditions:
Temperature (Fahrenheit): 63
Relative Humidity: 32%
Wind Speed and Direction: Calm
Cloud Cover: Partly Cloudy

Sound Level Meter:
Sound Level Meter: LDL Model 820 (BAC #8)
Calibrator: LDL Model CAL200
Meter Calibrated: Immediately before
Meter Settings: A-weighted, slow response

Microphone:
Microphone Location: On project site
Distance to Centerline (feet): 140
Microphone Height: 5 feet above ground
Intervening Ground (Hard or Soft): **Soft**
Elevation Relative to Road (feet): 37

Roadway Condition:
Pavement Type Asphalt
Pavement Condition: Good
Number of Lanes: 2
Posted Maximum Speed (mph): 50

Test Parameters:
Test Time: 3:17 PM
Test Duration (minutes): 13
Observed Number Automobiles: 79
Observed Number Medium Trucks: 3
Observed Number Heavy Trucks: 1
Observed Average Speed (mph): 53

Model Calibration:
Measured Average Level (L_{eq}): 60.2
Level Predicted by FHWA Model: 58.6
Difference: -1.6 dB

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Appendix E-1

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number:	2015-073
Project Name:	The Promontory Village 7
Roadway Name:	Sophia Parkway

Traffic Data:

Year:	2035
Average Daily Traffic Volume:	5,861
Percent Daytime Traffic:	92
Percent Nighttime Traffic:	8
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	1
Assumed Vehicle Speed (mph):	50
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				----------------L_{dn}, dB	----------------		
Lot(s)	**Description**	**Distance**	**Offset (dB)**	**Autos**	**Medium Trucks**	**Heavy Trucks**	**Total**
33	Nearest Northern Backyards	100	0	59	50	51	60
47-53	Nearest Deep Backyards	280	0	52	43	44	53
56-58	Backyards Near Lot E	180	0	55	46	47	56
59-61	Nearest Southern Backyards	100	0	59	50	51	60

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	Distance from Centerline, (ft)
75	10
70	22
65	48
60	103

Notes:

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Appendix E-2

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2015-073
Project Name: The Promontory Village 7
Roadway Name: Alexandra Way

Traffic Data:

Year:	2035
Average Daily Traffic Volume:	2,781
Percent Daytime Traffic:	92
Percent Nighttime Traffic:	8
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	2
Assumed Vehicle Speed (mph):	45
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				-----------------L_{dn}, dB		------------------	
Lots	**Description**	**Distance**	**Offset (dB)**	**Autos**	**Medium Trucks**	**Heavy Trucks**	**Total**
2-5	Nearest Backyards	75	0	56	48	52	58

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	Distance from Centerline, (ft)
75	6
70	12
65	27
60	57

Notes:

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Appendix E-3

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2015-073
Project Name: The Promontory Village 7
Roadway Name: Beatty Drive

Traffic Data:

Year:	2035
Average Daily Traffic Volume:	2,641
Percent Daytime Traffic:	92
Percent Nighttime Traffic:	8
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	2
Assumed Vehicle Speed (mph):	45
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				-----------------L_{dn}, dB		------------------	
Lots	**Description**	**Distance**	**Offset (dB)**	**Autos**	**Medium Trucks**	**Heavy Trucks**	**Total**
106-108	Nearest Backyards	55	0	58	50	54	60

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	**Distance from Centerline, (ft)**
75	6
70	12
65	26
60	55

Notes:

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Biological Resources Assessment

±182-Acre Promontory Village 7 Project
El Dorado County, California

Prepared for:

Russell-Promontory, LLC

August 10, 2016

Prepared by:

FOOTHILL ASSOCIATES

TABLE OF CONTENTS

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Executive Summary

Foothill Associates' biologists prepared this Biological Resources Assessment (BRA) for the ±182-acre Promontory Village 7 Project (Project Site), located in El Dorado County, California. The purpose of this BRA is to summarize the general biological resources within the Project Site, to assess the suitability of the Project Site to support special-status species and sensitive habitat types, to provide recommendations for regulatory permitting or further analysis that may be required, to address the current Mitigation Measures as outlined in the Promontory Specific Plan Environmental Impact Report (EIR) (SCH # 9411205), and to determine if there are any new or substantially greater significant impacts as compared to the significance determination contained in the Promontory Specific Plan EIR (EIR).

This BRA is based on an analysis of regionally occurring species documented on the U.S. Fish and Wildlife Service (USFWS; 2016), California Department of Fish and Wildlife (CDFW; 2016), and California Native Plant Society (CNPS; 2016) lists and the California Natural Diversity Data Base (CNDDB) map of special-status species documented within five miles of the Project Site. Regionally occurring species were excluded from this analysis due to the Project Site lacking suitable habitat required for the species or occurring outside of the geographic or elevation ranges required for the species. Only those species that are known to be present based on observations during the biological surveys of the Project Site or species that have the potential for occurrence are discussed in detail in this BRA.

Biological constraints within the Project Site include known or potential habitat for:

- Valley elderberry longhorn beetle (*Desmocerus californicus dimophus*);
- Western pond turtle (*Emys marmorata*);
- Foraging habitat within the non-native annual grassland for golden eagle (*Aquila chrysaetos*);
- California red-legged frog (*Rana draytonii*);
- Burrowing owl (*Athene cunicularia*);
- American badger (*Taxidea taxus*);
- Special-status bats, including Pallid bat (*Antrozous pallidus*);
- Migratory birds and raptors, including white-tailed kite (*Elanus leucurus*); and
- Sensitive habitats (potentially jurisdictional waters of the U.S., riparian habitat, and oak woodland canopy).

1.0 INTRODUCTION

The purpose of this BRA is to summarize the general biological resources within the Project Site, to assess the suitability of the Project Site to support special-status species and sensitive habitat types, and to provide recommendations for regulatory permitting or further analysis that may be required.

The biological resources discussion provided herein is based on the results of the 2015 biological surveys conducted within the Project Site and addresses the current Mitigation Measures as outlined in The Promontory Specific Plan EIR (SCH # 9411205) to determine if there are any new impacts as compared to the significance determination contained in the Promontory Specific Plan EIR within the Project Site.

1.1. Project Design

The Promontory Village 7 Project (Proposed Project) is an individual tentative map within the greater 999-acre Promontory Specific Plan Area. The Proposed Project involves the development of 32 medium lot units that total 8.2 acres, 50 large lot units that total 39.4 acres, 49 hillside large lot development envelope units that total 37.9 acres, hillside large lot private open space that totals 37.9 acres, open space that totals 33 acres, and landscape lots that total 5.8 acres. The project design is illustrated on **Appendix A**. Locations of work proposed to occur adjacent to wetlands and other waters of the U.S. are shown on Exhibits A through J within **Appendix A**, and proposed individual improvements are described below.

Improvement A consists of residential lot embankment and a retaining wall. Proposed improvements include placement of an embankment and the construction of a retaining wall. No impacts to delineated waters are proposed.

Improvement B consists of roadway improvements. An existing service road, culvert, and rock slope protection were constructed and compensated for under Department of the Army Permit 199001102 for the Promontory. Currently, proposed improvements include improving the existing service road to a residential roadway with minor earthwork, construction of a retaining wall, and the construction of drainage ditches near the upstream side of the culvert. No impacts to the delineated waters other than those previously authorized by Permit 199001102 are proposed.

Improvement C consists of roadway improvements. An existing service road, culvert, and rock slope protection were constructed and compensated for under Department of the Army Permit 199001102 for the Promontory. Currently, proposed improvements include improving the existing service road to a residential roadway with minor earthwork, construction of a retaining wall, and the construction of a drainage ditch near the upstream side of the culvert. No impacts to the delineated waters other than those previously authorized by Permit 199001102 are proposed.

Improvement D consists of roadway improvements. An existing service road, culvert, and rock slope protection were constructed and compensated for under Department of the Army Permit

199001102 for the Promontory. Currently, proposed improvements include improving the existing service road to a residential roadway with minor earthwork and the construction of a drainage ditch near the upstream side of the culvert. No impacts to the delineated waters other than those previously authorized by Permit 199001102 are proposed.

Improvement E consists of roadway improvements. An existing service road, culvert, and rock slope protection were constructed and compensated for under Department of the Army Permit 199001102 for the Promontory. Currently, proposed improvements include improving the existing service road to a residential roadway with minor earthwork and the construction of a drainage inlet near the upstream side of the culvert. No impacts to the delineated waters are proposed.

Improvement F consists of a service road and roadway improvements. Currently, proposed improvements include removal of an existing 12" culvert, realignment of an existing service road, excavation, and placement of a storm drain culvert, inlet, and ditches. Adjacent improvements include roadway construction, earthwork, and drainage infrastructure. No impacts to the delineated waters are proposed.

Improvement G consists of roadway improvements. Currently, proposed improvements include roadway construction, earthwork, and drainage infrastructure. No impacts to the delineated waters are proposed.

Improvement H consists of roadway improvements. Proposed improvements include roadway construction, earthwork, culvert(s), rock slope protection, ditches, and headwalls. No impacts to the delineated waters are proposed.

Improvement I consists of sewer and water line extensions. Proposed improvements include construction of a water line, a sewer line, and a drainage ditch.

Improvement J consists of two options for a potential water line extension. These improvements may be required by the El Dorado Irrigation District (EID) to improve existing system operations.

> **Option A** would include improving an existing dirt road to be utilized as a utility service road (top surface would be aggregate base, except at existing culvert where a concrete weir will be constructed), earthwork, and a water line extension. No impacts to the delineated waters are proposed.
>
> **Option B** would include the construction of a utility service road (top surface to be aggregate base), earthwork, a water line extension, and an open bottom arch to span the delineated waters including headwalls. No impacts to the delineated waters are proposed.

2.0 BACKGROUND

2.1. Promontory Specific Plan Environmental Report

El Dorado County (County) certified an Environmental Impact Report (EIR) on November 4, 1997 for *The Promontory Specific Plan* (Specific Plan) (SCH# 94112056). The Specific Plan EIR identified significance thresholds for all projects impacts and includes specific mitigation measures to address both site-specific and cumulative effects resulting from proposed development.

The Board of Supervisors (Board) adopted Findings of Fact and a Statement of Overriding Considerations finding the project would have economic, social, and other benefits that render acceptable the significant unavoidable environmental effects associated with the Specific Plan. The impacts to biological resources were considered significant unavoidable environmental effects according to the Statement of Overriding Considerations because the Mitigation Measures related to biological resources in the Specific Plan would not guarantee the full avoidance of all significant biological effects (County of El Dorado 1997). The Board identified the following unavoidable significant effects related to biological issues: "*elimination, disturbance, or interruption of special status species as a direct or indirect result of development*"; "*direct or indirect loss of fragmentation of wildlife habitat and/or degradation of habitat values*"; "*disruption of deer migration patterns and critical deer habitat*"; and "*removal of a substantial loss of oak woodland would result in permanent loss of important plant and wildlife habitat*" (County of El Dorado 1997). The Board was guided in this conclusion by the Statement of Overriding Considerations identified when approving the El Dorado County General Plan.

The County's actions to approve the Specific Plan and certify the EIR were subject to litigation and a subsequent Settlement Agreement. Based on the Settlement Agreement, the applicant reduced the residential dwelling unit densities allowed under the Specific Plan from 1,387 units to 1,100 units (County of El Dorado 1999). Other minor changes to the Specific Plan were proposed to reduce environmental impacts. The County prepared an addendum to the 1997 EIR.

The amended Specific Plan includes the preservation of an additional 1.29 acres of wetlands and riparian corridors re-vegetated with native plants. Additionally, changes to the Specific Plan also minimize the use of culverts and concrete v-ditches and instead maximize the use of open spaces and unlined channels. The County determined that proposed modifications would result in reduced impacts to biological resources compared to those impacts analyzed previously in the project's 1997 Draft EIR.

On September 28, 1999, the Board of Supervisors adopted the findings proposed by staff and approved the Specific Plan amendments. The Notice of Determination (NOD) for the addendum was filed October 6, 1999. In conjunction with approval of the amended Specific Plan and certification of the EIR Addendum, a Mitigation Monitoring and Reporting Program (MMRP) was prepared and adopted.

While measures within the MMRP relevant to biological resources include measures that reduce impacts to Specific Plan biological resources during Specific Plan construction and development, impacts to biological resources remained significant and unavoidable. The MMRP is a binding document that is applicable to the Village 7 development. The specific biological resources measures contained in the MMRP, which the Village 7 residential development is required to implement, include measures that reduce the impacts to the biological resources during the construction and development of the project. The biological mitigation measures identified within the MMRP are provided in **Section 3.6**. For the entire summary of the mitigation measures, refer to the MMRP in **Appendix B**.

The EIR also analyzed proposed water supply throughout the Specific Plan area to be provided for by EID through 8-inch and 16-inch supply lines, and a water tank, and included the need for multiple zones of pressure, as applicable, to adequately supply water throughout the Specific Plan area.

3.0 REGULATORY FRAMEWORK

Federal, State, and local environmental laws, regulations, and policies relevant to the California Environmental Quality Act (CEQA) review process are summarized below. The CEQA significance criteria are also included in this section.

3.1. Federal Regulations

3.1.1. Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3)(19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

In the context of the proposed project, FESA consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

3.1.2. Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

3.1.3. The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to "take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof." Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

3.2. State Jurisdiction

3.2.1. California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), when preparing CEQA documents. The purpose is to ensure that the state lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

3.2.2. California Department of Fish and Game Codes

A number of species have been designated "fully protected" species under Sections 5515, 5050, 3511, and 4700 of the Fish and Game Code, but are not listed as endangered (Section 2062) or threatened (Section 2067) species under CESA. Except for take related to scientific research, all take of fully protected species is prohibited. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Additionally, Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests.

3.2.3. Native Plant Protection Act

The NPPA was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

3.3. Jurisdictional Waters

3.3.1. Federal Jurisdiction

The U.S. Army Corps of Engineers (Corps) regulates discharge of dredge or fill material into waters of the U.S. under Section 404 of the Clean Water Act (CWA). "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)].

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" [33 C.F.R. §328.3(b)]. Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) [33 C.F.R. §328.4(c)(1)]. The OHWM is defined by the Corps as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" [33 C.F.R. §328.3(e)].

An aquatic feature is determined to be a water of the U.S. based on nexus with a traditionally navigable water pursuant to the Supreme Court's decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (126 S. Ct. 2208) and agency guidance subsequent to this decision. Under these rules, the Corps asserts jurisdiction over wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries (i.e., waters that have a continuous flow at least three months out of the year), and wetlands that abut relatively permanent tributaries. The Corps determines jurisdiction over waters that are non-navigable tributaries that are not relatively permanent, and wetlands adjacent to these tributaries, by making a determination whether such waters "significantly affect the chemical, physical, and biological integrity of other jurisdictional waters more readily understood as "navigable." Finally, the Corps generally does not consider the following to be "waters of the United States": swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent or short duration flow) and ditches "wholly in and draining only uplands…which do not carry a relatively permanent flow of water." Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation.

3.3.2. State Jurisdiction

Regional Water Quality Control Boards

Discharges of fill or waste material to waters of the state are regulated by the State Water Resources Control Board through its Regional Water Quality Control Boards (RWQCB) under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (contained in the California Water Code). All waters of the U.S. are also considered waters of the State. In addition, other aquatic features that are not subject to Corps' jurisdiction, such as roadside ditches or isolated wetlands, may be considered waters of the state. This determination will be made by RWQCB staff on a case-by-case basis.

Section 401 of the CWA to requires an applicant to obtain "water quality certification" to ensure compliance with state water quality standards before certain federal licenses or permits may be issued. Section 13260(a) of the Porter-Cologne Water Quality Control Act requires any person discharging waste, including dredged or fill material, or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The permits subject to Section 401 include CWA Section 404 permits issued by the Corps. Waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. Discharges to waters of the state that are not subject to a CWA Section 404 permit rely on the report of waste discharge process.

California Department of Fish and Wildlife

The CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends submitting an application for a Streambed Alteration Agreement for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

3.4. CEQA Significance

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

3.4.1. California Native Plant Society

The California Native Plant Society (CNPS) maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere

- Rank 3: Plants about which we need more information – A Review List

- Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

3.4.2. California Department of Fish and Wildlife Species of Concern

In addition to species that are formally listed under FESA and CESA or are fully protected, some additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to “Species of Special Concern” (SSC), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (CNDDB), but warrant no legal protection. These species are identified as “California Special Animals” (CSA).

3.5. The Promontory Specific Plan

In addition to federal and State regulations, the Specific Plan includes goals, objectives, and policies regarding open space and grading. Sections relevant to this Project Site are summarized below. The Specific Plan measures are in compliance with the *El Dorado County General Plan* (El Dorado County 2004).

3.3 Land Use Categories

Village Seven (V7)

Village Seven is located east of the Russell Ranch project in Folsom, and adjacent to the open space abutting Village Six. The Village Center lies directly to the north. Village Seven is dominated by steep north and west facing slopes in excess of 20% that are very visible from the Folsom area. Clusters of the oaks are located throughout the site, but there are no large wooded areas.

Due to slope conditions in the area and its visibility from the west, the Hillside Development Standards will apply to almost all of this area. However, the lotting design should be encouraged to increase the density in flatter areas while preserving steeply sloped areas through utilization of larger lots.

3.5 Open-Space Plan

The Open-Space Plan for The Promontory is designed to protect important natural resources, maintain steep slopes in their natural state, and provide both passive and active recreation opportunities. The amount of public space provided for in the Specific Plan is approximately 101.1 acres including 13.6 acres of park space. However, there is approximately another 185 acres of privately maintained open space where use of the land will be controlled by deed restrictions, government codes, and Convents, Conditions, and Restrictions (CC&Rs). With the combination of public and private open space, the total land area set aside for the protection of natural resources or recreation will be approximately 299 acres.

Resource Protection

Oak woodland and grassland are the most prominent forms of vegetation found throughout the Project Site, with a small amount of wetlands, waterways, and riparian areas making up the balance. The oak woodland is generally found on side slopes or ridge tops and occurs either as scattered individual trees or in dense stands. No endangered plant species are known to occur within the Project Site.

Protection/replacement of oaks trees and the protection of steep slopes are assured through the use of Large Lot Single Family Hillside Development Standards.

Wetlands occur in and adjacent to a number of drainage ways, all of which are above the headwaters line.

3.6 Grading Plan

It is the intent of the Specific Plan to maintain the natural land forms and to preserve natural vegetation, to the maximum extent possible. Grading controls are intended to minimize soil erosion and to ensure compatibility with adjacent terrain. The Specific Plan is designed to be consistent with, and represent a refinement and expansion of, the broader standards in the El Dorado County Grading Ordinance, Design, and Improvement Standards.

3.6. The Promontory Specific Plan EIR Mitigation and Monitoring Measures

Mitigation and monitoring measures (MM) to minimize biological impacts were included in the EIR and are summarized below (ESA 1997b). A separate EIR CEQA mitigation consistency analysis has been prepared for the project (Foothill Associates 2016b).

Impact 4.8.1: An undetermined acreage of oak woodland will be removed due to project implementation. This would be a significant impact.

Mitigation Measure 4.8.1: *Mitigation for project impacts to trees shall include measures for tree protection, revegetation, compensation, and monitoring. All aspects of the following measures must be implemented to ensure mitigation/compensation for the impact.*

- *The project applicant shall develop and implement a Tree Protection Plan to minimize direct and indirect impacts to oak woodland on the project site during construction and operation phases of the proposed project. The Plan shall require the use of buffers to prevent or reduce the effects of disruption in the hydrologic or edaphic (growing) environment of heritage trees. Canopy cover retention within oak woodlands shall meet the requirements of General Plan Policy 7.4.4.4. The elements of the Tree Protection Plan shall appear as standards in the tentative subdivision maps, improvement plans, and subdivision CC&Rs. The Plan shall be implemented prior to ground clearing, grading, or other construction activities that may impact oak trees. Unless stated otherwise, all measures shall be the sole responsibility of the project applicant.*

- *The County or project applicant (with County approval) shall engage a qualified project biologist or equivalent professional to oversee all aspects of construction monitoring that pertain to oak tree protection. The County would be responsible for reviewing the monitoring program. The project applicant shall be responsible for reimbursing the County for all costs related to the compliance monitoring of the project.*

- *The project biologist shall be responsible for contractor education and shall monitor all construction activities in areas supporting sensitive biological resources. The project biologist shall be responsible for scheduling and/or implementing pre-construction tree surveys, and shall inform the County, the project engineers, and the project general contractor if there are construction activities that threaten protected oak trees for which no mitigation measures have been identified.*

- *The project biologist shall clearly mark on project maps all oak trees that oak woodlands to be avoided and shall provide these maps to the contractor. These areas shall be designated as "no construction" or "limited construction" zones. These areas shall be flagged by the project biologist prior to construction activities. In some cases, trees may need to be fenced or otherwise protected from direct or indirect impacts, as determined by the project biologist.*

- *The Tree Revegetation Plan shall consist of an implementation and monitoring component. Because the exact extent of tree loss can only be determined after final grading plans and* *building envelopes are defined, a detailed analysis of 1) the precise number and species of trees to be removed, and 2) the specific mitigation areas to be planted, shall be developed and identified as part of the tentative and final map processes, in compliance with General Plan Policy 7.4.5.1. Lost tree canopy cover must be replaced at the percentage required under Policy 7.4.4.4 of the County General Plan.*

- *The Monitoring and Management Plan shall identify monitoring and management techniques for a recommended time period (as determined during development of the Plan) following implementation. The Plan shall establish success criteria (performance standards) and shall describe steps to be taken to replace vegetation not meeting the success criteria (contingency plans). Performance standards could relate to the number of trees, area of canopy, or a combination. Appropriate data sampling and statistical treatment of data shall be developed and utilized.*

- *A preliminary mitigation plan shall be submitted for review prior to approval of subsequent tentative subdivision maps. A draft mitigation plan (including draft versions of the Tree Protection Plan, Revegetation Plan, and Monitoring and Management Plan) shall be submitted with the applications for tentative subdivision maps and other subsequent approvals. The final mitigation plans shall be submitted as part of the final subdivision map process or prior to approval of a grading permit for improvement plans, whichever comes first. Prior to implementation, the final plan shall be approved by the County. The project applicant shall identify and secure sources of funding and personnel to carry out all identified measures outlined above before any tree removal or grading permits are issued by the County.*

Significance After Mitigation: *Impacts to the oak woodland would remain significant and unavoidable with the implementation of the mitigation measures presented above.*

Impact 4.8.2: Project development would result in the direct filling and alteration of wetlands and waters of the U.S.

Mitigation Measure 4.8.2: Since no significant impact was identified, no mitigation is required.

Impact 4.8.3: The project has potential to significantly affect federally and state listed and other special-status species. This would be a cumulatively significant and unavoidable impact.

Mitigation Measure 4.8.3: The project applicant shall hire a biologist(s) approved by the County to conduct protocol surveys for species having a high potential to occur on the property or as being a "potential resident" of the property, which includes bald eagle (Haliaeetus leucocephalus), long-eared bat (Plecotus auritus), long-legged myotis (Myotis volans), yuma myotis (Myotis yumanensis), Cooper's hawk (Accipiter cooperii), sharp-shinned hawk (Accipiter striatus), long-eared owl (Asio otus), short-eared owl (Asio flammeus), ferruginous hawk (Buteo regalis), northern harrier (Circus cyaneus), white-tailed kite (Elanus leucurus), and burrowing owl (Athene cunicularia). In addition, the biologist(s) shall also conduct protocol survey for any new special-status species that may occur on the project site, which are listed by CDFW and/or USFWS subsequent to the certification of The Promontory Environmental Impact Report. Results of the protocol surveys shall be submitted to CDFW and/or USFWS, as required, and to the County prior to approval of subsequent tentative subdivision maps. If no sensitive species are located on-site, no further mitigation is necessary. If listed species are located on the property, the applicant and County shall enter into informal consultation with the appropriate resource agency and begin preparation of a Biological Assessment or Habitat Conservation Plan as applicable.

The precise mitigation/compensation for direct and indirect impacts to sensitive species will depend on the agency consultation and agreements. The project applicant shall implement all measures identified by the CDFW and the USFWS to protect and mitigate impacts to listed and other special-status species.

<u>Significance After Mitigation</u>: *The level of significance after mitigation is considered to be significant and unavoidable since the magnitude of the loss of special status species habitat is not quantifiable at this time.*

Impact 4.8.4: Project implementation has the potential to introduce or promote the spread of non-native plant species. The introduction or promotion of non-native species to the site or the region would be a potentially significant impact.

Mitigation Measure 4.8.4: The objective of this mitigation measure is to reduce the potential for introduction or dispersal of non-native plant species to less-than-significant levels. The following measures will be performed:

- *Project landscaping shall conform to County and California Native Plant Society guidelines within and adjacent to public and private open space areas. Table 4.8.3 of the EIR presents the following species that should **<u>not</u>** be used for project* *landscaping: Acacia (Acacia spp.), tree-of-heaven (Ailanthus altissima), giant reed (Arundo donax), bamboo (Bambusa spp., el al), pampas grass (Cortaderia selloana), cotoneaster (Cotoneaster pannosa), French broom (Cytisus monspessulanus), scotch broom (Cytisus scoparius), blue gum (Eucalyptus globulus), English ivy (Hedera helix), ice plant (Mesembryanthemum chilensis), mattress vine (Muelenbeckia complexa), tree tobacco (Nicotiana glauca), fountain grass (Pennisetum setaceum), pyracantha (Pyracantha angustifolia), castor bean (Ricinus communis), black locust (Robinia pseudoacacia), german ivy (Senecio mikianoides), Spanish broom (Sparteum junceum), tamarish (Tamarix spp.), gorse (Ulex europaeus), and periwinkle (Vinca major).*

Significance After Mitigation: *Less than significant.*

Impact 4.8.5: The project would result in disturbance to, or direct mortality of, common wildlife species. This would be a less than significant impact.

Mitigation Measure 4.8.5: Since no significant impact was identified, no mitigation is required.

Impact 4.8.6: Project development would result in a worst-case scenario the loss of up to 637 acres of California annual grassland.

Mitigation Measure 4.8.6: Since no significant impact was identified, no mitigation is required.

The loss of this community does not constitute a significant impact to biotic resources due to its relative abundance locally and regionally, and to the degraded nature of much of this community as a result of livestock grazing.

Impact 4.8.7: The proposed development would contribute incrementally to the cumulative loss and alteration of oak woodlands on a local and regional basis and habitat for sensitive and common plant and animal species.

Mitigation Measure 4.8.7: The project applicant shall implement mitigation measures 4.8.1, 4.8.3, and 4.8.4.

Significance After Mitigation: *Significant and unavoidable.*

4.0 METHODS

Available information pertaining to the natural resources of the region was reviewed. All references reviewed for this assessment are listed in the **References** section. The following site-specific information was reviewed:

- California Department of Fish and Wildlife (CDFW). 2016. California Natural Diversity Data Base (CNDDB: *Clarksville, Rocklin, Pilot Hill, Coloma, Shingle Springs, Latrobe, Buffalo Creek, Folsom SE, and Folsom U.S*. Geological Survey (USGS) 7.5-minute series quadrangles (quadrangles)), Sacramento, CA. [Updated 07/14/2016] (**Appendix C**);

- California Native Plant Society (CNPS). 2016. *Inventory of Rare and Endangered Plants* (online edition, v8-01a) (CNPS: *Clarksville, Rocklin, Pilot Hill, Coloma, Shingle Springs, Latrobe, Buffalo Creek, Folsom SE, and Folsom* quadrangles). [Updated 07/14/2016] (**Appendix C**);

- U.S. Fish and Wildlife Service (USFWS). 2016. *Information for Planning and Conservation (IPaC) Trust Resource Report: Promontory Village 7 Project, El Dorado County*. [Updated 07/14/2016] (**Appendix C**); and

- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 1974. *Soil Survey of El Dorado Area, California*. U.S. Department of Agriculture.

Foothill Associates' biologists conducted general biological and focused botanical surveys and wetland delineations on April 30 2015, May 20, 2015, June 5, 2015, June 17, 2015, and July 1, 2015. The biological surveys consisted of conducting botanical inventories, evaluating biological communities, mapping wetlands and waterways, and documenting habitat for special-status species with the potential to occur within the Project Site. A comprehensive list of plants and wildlife observed within the Project Site are identified in **Appendix D**. The botanical inventory followed CDFW's (2009) protocol plant surveys.

The delineations consisted of mapping wetlands and waterways. The delineation was submitted to the Corps requesting a preliminary jurisdictional determination on July 22, 2015 (Foothill Associates 2015). Foothill Associates conducted a site visit with the Corps on September 16, 2015. The delineation map was revised, dated September 23, 2015, and re-submitted to the Corps. The Corps concurred that there are 1.52 acres of wetlands and/or other water bodies present within the survey area which are regulated under Section 404 of the Clean Water Act, in a letter dated October 5, 2015 (Corps 2015). Following the issuance of the Preliminary Jurisdictional Determination, the U.S. Army Corps of Engineers was consulted regarding perennial, ephemeral, and intermittent drainage segments that were previously filled under the Section 404 Authorization issued for the overall Promontory Project (Department of the Army Permit 199001102). Based on fill implemented under the Promontory Section 404 Authorization the waters of the U.S. acreage would be reduced by 0.004 acre of ephemeral drainage, 0.017 acre of intermittent drainage, and 0.002 acre of perennial drainage (0.02 acre overall). The Corps has verbally agreed to issue an updated Jurisdictional Determination reflecting these modifications, upon submittal of a revised delineation map and the corresponding data[1]. The aquatic resource acreages presented in **Table 1** reflect these updated acreages.

Protocol-level surveys for California red-legged frog (CRLF) were conducted in accordance with the *Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog* (USFWS 2005; CRLF Guidance) on July 1, 2015, January 12 and 26, 2016 and February 2 and 9, 2016. The results of the protocol-level surveys are summarized herein and are discussed in detail under a separate cover (Foothill Associates 2016a).

An oak woodland canopy analysis was performed in the Project Site to document the extent of the existing oak woodland habitat. Oak canopies were mapped in ArcGIS 10.3 using a combination of aerial photo interpretation of the 2014 NAIP image and field observation. The analysis amount and location of canopy cover is provided herein.

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[1] Verbal communication with U.S. Army Corps of Engineers Regulatory Project Manager Peck Ha, August 4, 2016.

5.0 RESULTS

5.1. Site Location

The ±182-acre Project Site is located in a residential area in El Dorado Hills within the western border of El Dorado County, adjacent to the Sacramento County line. The Project Site is bordered by Galston Drive to the west, by Alexandra Drive to the north, by Beatty Drive to the east, and annual grassland to the south. The Project Site is located within Township 10 North, Range 8 East, within portions of Sections 28, 33, and 34 of the *Clarksville* quadrangle. The approximate location of the Project Site is 38° 40’ 50.029” North, 121° 5’ 52.670” West (**Figure 1**).

5.2. Physical Features

5.2.1. Topography and Drainage

The topography is comprised of a steep slope that descends from the center of the Project Site to the west and east sides of the Project Site. Elevations range from 880 feet above mean sea level (MSL) in the central portion of the Project Site to 435 feet above MSL in the northwestern portion of the Project Site.

The Project Site includes unnamed intermittent and ephemeral drainages that flow westward to the western boundary of the Project Site. Several ephemeral drainages drain to the perennial drainage within the northeastern portion of the Project Site. The perennial drainage flows northwestward to the northeastern boundary of the Project Site. These features drain to Willow Creek to the west of the Project Site. Willow Creek is tributary to Lake Natoma. Lake Natoma is tributary to the American River.

5.2.2. Soils

The Natural Resources Conservation Service (NRCS) has mapped three soil units within the Project Site (**Figure 2**): **Auburn Very Rocky Silt Loam, 2 to 30 Percent Slopes**, **Auburn Very Rocky Silt Loam, 30 to 50 Percent Slopes**, and **Auburn Silt Loam, 2 to 30 Percent Slopes**. General characteristics associated with these soil types are described below (USDA, NRCS 1974 and 2016a).

- **(AxD) Auburn Very Rocky Silt Loam, 2 to 30 Percent Slopes**: This soil unit occurs on the more prominent steep to very steep foothills and slopes descending into creek channels and drainageways, typically located between 500 to 1,800 feet above mean sea level (MSL). Bedrock outcroppings occur on the surface of this soil type at a frequency of 5 to 25 percent. The Auburn series consists of well drained soils underlain by hard metamorphic rocks at a depth of 12 to 26 inches. Permeability is moderate and surface runoff is slow to medium. The hydric soils list for El Dorado County does not identify this soil type as hydric (USDA, NRCS 2016b).

- **(AxE) Auburn Very Rocky Silt Loam, 30 to 50 Percent Slopes**: This soil unit is found on steep areas of more prominent foothills and slopes that drop into creek channels and drainageways. Surface runoff is medium to rapid and erosion hazard is moderate to high. The hydric soils list for El Dorado County does not identify this soil type as hydric (USDA, NRCS 2016b).

- **(AwD) Auburn Silt Loam, 2 to 30 Percent Slopes**: This soil unit occurs on undulating to very steep foothills, typically located between 500 to 1,800 feet above MSL. Bedrock outcroppings occur on the surface of this soil type at a frequency of less than 5 percent. The Auburn series consists of well drained soils underlain by hard metamorphic rocks at a depth of 12 to 26 inches. Permeability is moderate and surface runoff is slow to medium. The hydric soils list for El Dorado County does not identify this soil type as hydric (USDA, NRCS 2016b).

5.3. Wildlife Corridors

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Fragmentation can also occur when a portion of one or more habitats is converted into another habitat, such as when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or grading activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.

The Project Site is not part of a major or local wildlife corridor/travel route because it does not connect two significant habitats. The Project Site is surrounded by residential development. The unnamed intermittent and ephemeral drainages that cross through the Project Site do not act as wildlife corridors since these features initiate within the eastern boundary of the Project Site and flow beneath Sophia Parkway and residential development outside the western boundary of the Project Site. The ephemeral and perennial drainages within the northeastern portion of the Project Site are bordered on both ends by Beatty Drive. Therefore, no wildlife corridors occur within the Project Site.

5.4. Biological Communities

The following biological communities occur within the Project Site: non-native annual grassland, oak woodland, riparian woodland, developed, depressional seasonal wetland, slope seep, ephemeral drainage, perennial drainage, and intermittent drainage. **Table 1** summarizes the biological communities by acreages. Dominant vegetation observed within each biological community is discussed in detail below. A comprehensive list of plants observed within the Project Site is provided in **Appendix D**. The biological communities are depicted in **Figure 3**.

TABLE 1 — PROMONTORY VILLAGE 7 BIOLOGICAL COMMUNITIES BY ACREAGES

Biological Community (Project Site)	Total Acreage[1]
Non-Native Annual Grassland	81.85
Oak Woodland (41.04 acres of Oak Tree Canopy)	89.63
Riparian Woodland	1.89
Developed	7.38
Depressional Seasonal Wetland	0.12
Slope Seep	0.67
Ephemeral Drainage	0.20
Perennial Drainage	0.45
Intermittent Drainage	0.06
Total	**182.25**

[1] GIS calculations may not reflect the exact acreage of the Project Site due to rounding.

5.4.1. Non-Native Annual Grassland

Non-native annual grassland occurs throughout the Project Site. Non-native annual grassland is characterized primarily by an assemblage of non-native grasses and herbaceous species. Dominant vegetation includes: ripgut grass (*Bromus diandrus*), slender oat (*Avena barbata*), filaree (*Erodium botrys*), and winter vetch (*Vicia villosa*). Isolated interior live oak (*Quercus wislizeni*) and blue oak (*Quercus douglasii*) trees occur within the non-native annual grassland.

5.4.2. Oak Woodland

Oak woodland occurs within the northern and eastern portions of the Project Site. Dominant vegetation includes: blue oak, interior live oak, ripgut grass, slender oat, California buckeye (*Aesculus californica*), western poison oak (*Toxicodendron diversilobum*), ripgut grass, slender oat, and winter vetch. Oak woodland habitat includes both the area directly under oak canopy and surrounding open areas that are influenced by the adjacent oaks. Oak canopy covers approximately half of the oak woodland habitat area, as discussed further in **Section 5.7.3**.

5.4.3. Riparian Woodland

Riparian habitat occurs along the intermittent drainage within the southern portion of the Project Site and within and along the perennial drainage within the northeastern portion of the Project Site. Dominant vegetation includes: willow (*Salix* sp.), edible fig (*Ficus carica*), pennyroyal (*Mentha pulegium*), Chinese pistache (*Pistacia chinensis*), curly dock (*Rumex crispus*), California buckeye, western poison oak, and Himalayan blackberry (*Rubus armeniacus*). Dense riparian vegetation covers the majority of the perennial drainage. Isolated blue elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs occur within the riparian corridor along the banks of the perennial drainage and within the oak woodland in the vicinity of the riparian corridor that surrounds the perennial drainage.

5.4.4. Developed

Developed areas occur throughout the Project Site and are comprised of graded roads and rip-rap. The graded roads are El Dorado Irrigation District (EID) maintenance roads that were constructed for sewer line access. The majority of the developed areas lack vegetation.

5.4.5. Depressional Seasonal Wetland

Depressional seasonal wetlands occur within the Project Site. The depressional seasonal wetlands occur along hillslopes and only hold water for short durations of time until water either percolates into the ground or drains to the ephemeral drainage. Dominant vegetation includes: ryegrass (*Festuca perennis*), curly dock, willowherb (*Epilobium brachycarpum*), and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*).

5.4.6. Slope Seep

Slope seeps occur within the Project Site. Dominant vegetation includes: soft rush (*Juncus effusus*), ryegrass, Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), hedge-nettle (*Stachys albens*), Mexican rush (*Juncus mexicanus*), curly dock, and Baltic rush (*Juncus balticus* ssp. *ater*).

5.4.7. Ephemeral Drainage

Several unnamed ephemeral drainages occur within the Project Site. Dominant vegetation includes: winter vetch, ripgut grass, slender oat, ryegrass, phacelia (*Phacelia cicutaria*), and medusahead (*Elymus caput-medusae*).

5.4.8. Perennial Drainage

An unnamed perennial drainage flows from northeast to northwest through the northeastern portion of the Project Site. Dominant vegetation within and along the banks of the perennial drainage includes those identified within the Riparian biological community discussed in **Section 5.4.3**.

5.4.9. Intermittent Drainage

An unnamed intermittent drainage flows from east to west through the southern portion of the Project Site. Dominant vegetation within and along the banks of the intermittent drainage includes those identified within the Riparian biological community discussed in **Section 5.4.3**.

5.5. Wildlife Observed

Wildlife observed foraging within the Project Site includes: western scrub jay (*Aphelocoma californica*), red-winged blackbird (*Agelaius phoeniceus*), Brewer's blackbird (*Euphagus cyanocephalus*), northern mockingbird (*Mimus polyglottos*), white-tailed kite, and golden eagle. A comprehensive list of wildlife observed within the Project Site is provided in **Appendix D**.

5.6. Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under the CESA or the FESA;
- Protected under other regulations (e.g. MBTA);
- CDFW Species of Special Concern;
- Plant species ranked by the CNPS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on the CNDDB, CNPS, and USFWS lists. CNDDB occurrences of special-status species documented within five miles of the Project Site are illustrated within **Section 5.4.3** (CDFW 2016). **Appendix E** includes the common and scientific names for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and potential for occurrence in the Project Site. The following set of criteria has been used to determine each species potential for occurrence within the Project Site:

- **Present**: Species known to occur within the Project Site based on CNDDB records and/or observed within the Project Site during the biological surveys.
- **High**: Species known to occur on or near the Project Site (based on CNDDB records within 5 miles and/or based on professional expertise specific to the Project Site or species) and there is suitable habitat within the Project Site.
- **Low**: Species known to occur in the vicinity of the Project Site and there is marginal habitat within the Project Site **-OR-** Species is not known to occur in the vicinity of the site, however, there is suitable habitat on the site.
- **None**: Species is not known to occur on or in the vicinity of the Project Site and there is no suitable habitat within the Project Site **-OR-** Species was surveyed for during the appropriate season with negative results **-OR-** The Project Site does not provide suitable soils or occurs outside of the known elevation or geographic ranges **-OR-** Species is not known in El Dorado County.

Only those species that are known to be present or have a high or low potential for occurrence are discussed further in the following paragraphs.

5.6.1. Listed and Special-Status Plants

No special-status plants occur within the Project Site. Although the Project Site provides habitat for several special-status plants, none were observed during the April 30, May 20, and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.

5.6.2. Listed and Special-Status Wildlife

The following special-status wildlife species have a *high* potential to occur or were observed within the Project Site: valley elderberry longhorn beetle, western pond turtle, golden eagle, and white-tailed kite. The following special-status wildlife species have a *low* potential to occur within the Project Site: California red-legged frog, burrowing owl, American badger, and Pallid bat.

Species Present or with a High Potential to Occur

Valley Elderberry Longhorn Beetle

The USFWS considers the range of valley elderberry longhorn beetle (VELB) to include the watersheds of the American, San Joaquin, and Sacramento rivers and their tributaries up to approximately 3,000 feet above MSL (USFWS 1980). VELB are completely dependent on elderberry (*Sambucus* sp.) shrubs as their host plants during their entire lifecycle. VELB typically utilize stems that are at least one inch diameter at ground level (dgl) (USFWS 1994). This species is found in riparian woodland (Nature Serve 2015). There are two CNDDB records for this species within five miles of the Project Site (**Figure 4**) (CDFW 2016). A total of four elderberry shrubs with stems comprised of at least one-inch dgl are present within or along the edge of the riparian corridor along the perennial drainage within the northeastern portion of the Project Site (**Figure 3**). Three of these are within the riparian habitat along the perennial drainage and one is within the oak woodland just west of the riparian corridor that surrounds the perennial drainage. Access to one elderberry shrub was limited due to the dense riparian vegetation surrounding the stems. Although no VELB or exits holes were observed within the stems that were accessible, they may be present on the stems that are located in areas where access was impenetrable. This species has the potential to occur within the Project Site.

Western Pond Turtle

Western pond turtles are found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with suitable basking sites (Californiaherps 2015). Suitable aquatic habitat typically has a muddy or rocky bottom and has emergent aquatic vegetation for cover (Stebbins 2003). Western pond turtles nest and overwinter in areas of sparse vegetation comprised of grassland and forbs with less than ten percent slopes, less than 492 feet (150 meters) from aquatic habitat (Rosenberg *et. al.* 2009). There are three CNDDB records for this species within five miles of the Project Site (**Figure 4**) (CDFW 2016). The perennial and intermittent drainages provide aquatic habitat and the riparian and non-native annual grassland provide upland habitat for this species. No western pond turtles were observed within the Project Site during the biological surveys. This species has the potential to occur within the Project Site.

Golden Eagle

Golden eagles live in semi-open habitats where they have easy access to their primary prey of small to medium-sized mammals. Grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats provide foraging habitat. Nests are placed on cliffs or large trees and are maintained year and after year. Breeding occurs from January through August (Kochert *et al.* 2002). Golden eagle home range territories vary widely from 8 to 77 square miles

(McGrady 1997) and are estimated to average 48 square miles in northern California (Zeiner *et al.* 1990). Although only one nest is used each year, a territory may contain multiple alternate nests. Typically, there are between 6 and 14 nests are found in a territory (Kochert *et al.* 2002). Golden eagles may use the same nest for multiple years or use new nest sites every year (Watson 2010).

There is one CNDDB record of golden eagle documented within five miles of the Project Site (**Figure 4**) (CDFW 2016). This occurrence documents an active nest that was located in a foothill pine (*Pinus sabiniana*) on a hillslope surrounded by oak woodland. Existing residences are located uphill within 300 feet of the nest on the north and east. Two juvenile and two adult golden eagles were observed at the nest in August 2013. A pair of adult eagles returned to the nest in 2014 and successfully raised one eaglet, which fledged by June 18, 2014. However, the nest tree fell over during a storm in November 2014. An active golden eagle nest was subsequently identified in a foothill pine approximately 0.11 miles east of the Project Site on March 6, 2015. The new nest occurs within a foothill pine on a hillslope surrounded by oak woodland, approximately 25 feet from a residential dwelling. The extent of this territory and locations of alternate nests are unknown.

A golden eagle was observed flying over the Project Site during the April 30, 2015 and July 1, 2015 biological surveys. Both the current and previous golden eagle nest sites in the vicinity of the Project Site were built on hillslopes on isolated foothill pine trees that towered over the surrounding oak trees. The trees within the oak woodland could provide nesting, although the tree canopy within the Project Site is relatively uniform in height. The non-native annual grassland provides foraging habitat for this species. This species has the potential to forage and a *low* potential to nest within the Project Site.

White-Tailed Kite

White-tailed kite is a year-long resident in coastal and valley lowlands in California. White-tailed kite breed from February to October, peaking from May to August (Zeiner *et. al.* 1990). This species nests near the top of dense oaks, willows, or other large trees. There are two CNDDB records of white-tailed kite listed within five miles of the Project Site; one of which is mapped within the Project Site (**Figure 4**) (CDFW 2016). The trees within the riparian habitat and oak woodland provide nesting habitat for this species. This species has the potential to nest within the Project Site.

Species with a Low Potential to Occur

California Red-Legged Frog

Habitat Requirements

CRLF inhabit ponds, slow-moving creeks, and streams with deep pools that are lined with dense emergent marsh or shrubby riparian vegetation. Submerged root masses and undercut banks are important habitat features for this species. Breeding sites include pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds, lagoons, and artificial impoundments including stock ponds (USFWS 2011). CRLF breed between November and March. Embryos hatch 6 to 14 days after fertilization and larvae require 3.5 to 7 months to attain metamorphosis. CRLF may have been extirpated from the floor of the Central Valley prior to the 1960s (USFWS 2002). All of the extant records for CRLF in the Sierra Nevada range are over 800 feet above MSL (Rana Resources 2013). Below this elevation, aquatic habitat generally supports stronger populations of non-native predators associated with warm water habitats such as bullfrogs (*Lithobates catesbeiana*) and Centrarchid fish (Rana Resources 2013). The Project Site occurs between approximately 435 and 860 feet above MSL.

Documented Occurrences

There is one CNDDB occurrence approximately 3.5 miles north of the Project Site along a small drainage feeding directly into the east side of Folsom Lake (Occurrence Number 814) (**Figure 4**) (CDFW 2016), however, the validity of this record is highly questionable due to the low elevation (approximately 500 feet above MSL), the proximity to urban development and to Folsom Lake, and the abundant non-native predators that it supports (Rana Resources 2013). The record states that a juvenile frog was sighted on a small footbridge crossing a drainage leading into Folsom Lake from an adjacent residential development. This frog was most likely a juvenile bullfrog, which, to the untrained eye, can be easily confused with a juvenile CRLF (Rana Resources 2013). Even if this were a valid record, this location is separated from the Project Site by a number of impassible barriers including major roadways and urban development. The nearest valid CNDDB occurrences (Occurrence Number 1377) is from 1942 and is over 15 miles southeast of the Project Site at 820 feet above MSL (CDFW 2016). The record states that 3 CRLF were collected in an area near the mouth of the North Fork Cosumnes River, just north of the confluence with the Middle Fork Cosumnes River. This record has not been ground-truthed for presence of CRLF since the 1942 record.

Recovery Plan

According to the USFWS 2002 *Recovery Plan for the California Red-Legged Frog* (Recovery Plan), the Project Site is located in the northwestern edge of Core Area #4 - *Cosumnes River-South Fork American River*. However, as discussed in the Recovery Plan, some core areas, including most of the Sierra Nevada watersheds, do not currently support CRLF and instead represent areas where restoration of habitat and re-establishment efforts are most likely to be successful. The Recovery Plan also states that there are many areas of urban development and agricultural lands within any core area, which may not be considered suitable and will be excluded from recovery efforts. The *Cosumnes River-South Fork American River* Core Area was selected because native amphibians are present in Rock Creek, and the Cosumnes River is a focus of restoration efforts by The Nature Conservancy. The Rock Creek Watershed occurrences are those described previously, located approximately 23 miles northeast of the Project Site and approximately 1,400 feet higher in elevation.

Suitable Habitat within the Project Site

The steep, small, approximately one to three foot wide and deep ephemeral drainages do not provide suitable aquatic habitat for CRLF given the lack of riparian vegetation and lack of water present during any of the surveys. The unnamed intermittent drainage provides low quality habitat for this species due to the lack of deep pools within the Project Site. The perennial drainage provides breeding habitat for this species. The riparian habitat surrounding the perennial and intermittent drainages provides upland habitat. The non-native annual grassland surrounding the perennial and intermittent drainages and riparian habitat provides upland overland migration for CRLF.

Potential to Occur Within the Project Site

Although suitable habitat is present, the Project Site is surrounded by residential development, the highest portion of the Project Site is at the lowest known extant elevation range inhabited by CRLF, and there are no known CNDDB occurrences for CRLF within over 15 miles of the Project Site. In addition, the results of the protocol-level surveys conducted within the Project Site were negative for CRLF (Foothill Associates 2016a). Therefore, this species does not occur within the Project Site.

Burrowing Owl

Burrowing owl is a small ground-dwelling owl that occurs in western North America from Canada to Mexico, and east to Texas, and Louisiana. Although in certain areas of its range burrowing owls are migratory, these owls are predominantly non-migratory in California. The breeding season for burrowing owls occurs from March to August, peaking in April and May (Zeiner *et. al.* 1990). Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. Burrowing owl is also known to use artificial burrows including pipes, culverts, and nest boxes. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds. There are four CNDDB records for this species within five miles of the Project Site (**Figure 4**) (CDFW 2016). The non-native annual grassland provides marginal habitat for this species given the relatively steep terrain and lack of potential burrow sites present within the Project Site that could be utilized by burrowing owl. No burrowing owls or their sign were observed during the biological surveys. This species has the potential to breed or winter within the non-native annual grassland.

American Badger

American badgers are found in dry, open habitats including grassland and open woodland. Suitable burrowing habitat requires dry, sandy soil. Breeding occurs in summer and early fall, with young being born from March to April (Nature Serve 2015). There are no CNDDB records for this species within five miles of the Project Site. The non-native annual grassland provides marginal habitat for this species given the lack of sandy soils and suitable burrow sites present within the Project Site. No American badgers were observed during the biological surveys. This species has the potential to occur within the Project Site.

Special-Status Bats, including Pallid Bat

California is home to several special-status bat species, including Pallid bat. Bat numbers are in decline throughout the U.S. due to loss of roosting habitat, habitat conversion, and habitat alteration. No bat species were observed roosting during the biological surveys of the Project Site. The trees within the oak woodland, non-native annual grassland, and riparian habitat provide day roosting habitat and the non-native annual grassland provides foraging habitat for special-status bats. These species have the potential to roost within the Project Site.

5.6.3. Nesting Birds of Conservation Concern Protected under the Migratory Bird Treaty Act (MBTA) and §3503.5 Department of Fish and Game Code

Migratory birds and other birds of prey, including those identified as Birds of Conservation Concern in **Table 2** in **Appendix E**, are protected under 50 CFR 10 of the MBTA and/or Section §3503.5 of the California Fish and Game Code. Migratory birds and other birds of prey have the potential to nest within the Project Site during the nesting season. The generally accepted nesting season is from February 15 through August 31.

5.7. Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Additionally, sensitive habitats are protected under the specific policies outlined in *The Promontory Specific Plan*. Sensitive habitats within the Project Site include riparian habitat, potential waters of the U.S., including seasonal wetlands, seeps, a perennial drainage, an intermittent drainage, and ephemeral drainages, and oak woodland canopy.

5.7.1. Potential Jurisdictional Waters of the U.S.

Potential jurisdictional wetlands and waters of the U.S. within the Project Site total 1.50 acres. The acreage includes approximately 0.12 acre of depressional seasonal wetland, 0.67 acre of slope seep, 0.45 acre of perennial drainage, 0.06 acre of intermittent drainage, and 0.20 acre of ephemeral drainage (**Figure 3**).

5.7.2. Riparian Woodland

Riparian habitat is considered a sensitive habitat. The CDFW asserts jurisdiction over riparian habitat. There are 1.89 acres of riparian woodland habitat (**Figure 3**).

5.7.3. Oak Canopy

The EIR identified 36.07 acres of existing oak woodland canopy on the Project Site. Mitigation measures for impacts to oak trees were developed in the EIR (see **Section 3.6** of this report). An *Oak Tree Protection, Revegetation, and Monitoring Plan* (Revegetation Plan) was prepared in 2005 and updated in 2008 (Foothill Associates 2008). In accordance with this plan, 4.3 acres of oak tree plantings were installed within the Central Open Space, which is located along the eastern boundary of the Project Site, as mitigation for impacts associated with other Promontory projects. Monitoring of these mitigation trees was completed in 2013, as documented in the *Mitigation Status Report* (Foothill Associates 2014).

Based on current conditions, approximately 41.04 acres of oak canopy occur within the Project Site (**Figure 3**). This acreage includes new oak woodland areas resulting from mitigation planting and natural growth of oak trees over the intervening years.

6.0 BIOLOGICAL CONSTRAINTS AND RECOMMENDED MEASURES

Biological constraints within the Project Site include known or potential habitat for:

- Valley elderberry longhorn beetle (*Desmocerus californicus dimophus*);
- Western pond turtle (*Emys marmorata*);
- Foraging habitat within the non-native annual grassland for golden eagle (*Aquila chrysaetos*);
- California red-legged frog (*Rana draytonii*);
- Burrowing owl (*Athene cunicularia*);
- American badger (*Taxidea taxus*);
- Special-status bats, including Pallid bat (*Antrozous pallidus*);
- Migratory birds and raptors, including white-tailed kite (*Elanus leucurus*); and
- Sensitive habitats (potentially jurisdictional waters of the U.S., riparian habitat, and oak woodland canopy).

6.1. Valley Elderberry Longhorn Beetle

Four elderberry shrubs comprised of stems with at least one-inch dgl are located within or adjacent to the riparian corridor along the perennial drainage within the northeastern portion of the Project Site. Although no VELB or exits holes were observed within the stems that were accessible, they may be present on the stems that are located in areas where access was impenetrable. Consultation with the USFWS is recommended if construction is anticipated within 100 feet of any elderberry shrubs.

According to the *USFWS Conservation Guidelines for Valley Elderberry Longhorn Beetle* (Guidelines; USFWS 1999), encroachment within 100 feet from elderberry shrubs with stems measuring at least one inch dgl must be approved by the USFWS and a minimum setback of 20 feet from the driplines of the elderberry shrubs must be maintained. Project activities that will encroach into the 20-foot minimum setback area are assumed to adversely affect VELB. Project activities that may directly or indirectly affect elderberry shrubs with stems measuring at least one inch dgl require minimization measures including planting replacement habitat or purchasing mitigation credits from a USFWS-approved mitigation bank. The mitigation ratios vary based on whether exit holes are present and whether the shrubs occur within riparian habitat.

The elderberry shrubs are located within the open space area and will not be impacted with construction within 100 feet. There is not a new or substantially greater significant impact compared to the significance determination identified in the Specific Plan EIR.

6.2. Western Pond Turtle

The perennial and intermittent drainages provide aquatic habitat and the riparian and non-native annual grassland provide upland habitat for western pond turtle. Pre-construction surveys for western pond turtle are recommended within 14 days prior to the start of ground disturbance within 500 feet of the perennial and intermittent drainages. If no western pond turtles are observed, then a letter report documenting the results of the survey should be provided to the project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If western pond turtles are found, additional avoidance measures are recommended including having a qualified biologist conduct a pre-construction survey within 24 hours prior to commencement of construction activities, performing a worker awareness training to all construction workers, and being present on the project site during grading activities within 500 feet of the perennial and intermittent drainages for the purpose of relocating any western pond turtles found within the construction footprint to suitable habitat away from the construction zone, but within the Project Site.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.3. Golden Eagle

An active golden eagle nest was observed approximately 0.11 miles (607 feet) east of the Project Site (**Figure 5**). The non-native annual grassland provides foraging habitat for golden eagle. There is potential for indirect impact to the eagles due to the loss of foraging habitat.

Impact 4.8.3 of the EIR determined that the project has the potential to significantly affect federally and state listed and other special-status species. The mitigation measure states "If listed species are located on the property, (emphasis added) the applicant and County shall enter into informal consultation with the appropriate resource agency…" The golden eagle nest is NOT located within the Project Site. The significance after the mitigation determined that the level of significance after the mitigation is considered to be **significant and unavoidable** since the magnitude of the loss of special status species habitat is not quantifiable at this time.

Impact 4.8.6 of the EIR states that project development would result in the loss of all 637 acres of annual grassland on the Promontory Specific Plan project. The 637 acres of annual grassland is for the entire Specific Plan area (Table 4.8-1 on page 4.8-3 of the EIR) (**Figure 6**). Although it is unlikely that all of the 81.81 acres of non-native annual grassland would be removed as a result of the Proposed Project, the removal of foraging habitat has already been considered in the EIR. Therefore, no additional mitigation for the removal of habitat is applicable.

The trees within the oak woodland provide marginal nesting habitat given that the canopy is relatively uniform in height. Pre-construction surveys for active golden eagle nests are recommended within 500 feet surrounding the Project Site within 14 days prior to the start of ground disturbance. The nesting season for golden eagle generally extends from January through August. If no golden eagle nests are observed, then a letter report documenting the results of the survey should be provided to the project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If an active golden eagle nest is found within 500 feet of the Project Site, a 500-foot buffer should be established around the nest. The biologist should mark the buffer zone with construction tape or pin flags. The biologist should conduct weekly site visits and no construction should occur within the buffer zone until a biologist determines that the nestlings have successfully fledged and the nest is no longer occupied. If the 500-foot buffer is infeasible, consultation with the CDFW and the USFWS is recommended and additional measures may be employed, including, but not limited to conducting daily monitoring and having the biologist have the authority to halt construction in the vicinity of the nest in the event that the nestlings appear to be disturbed. Construction in the vicinity of the nest should not commence until the biologist determines that the nestlings are no longer being disturbed.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.4. California Red-Legged Frog

Although marginally suitable habitat is present, the Project Site is surrounded by residential development, is outside of the known extant elevation range inhabited by CRLF, and there are no known CNDDB occurrences for CRLF within 15 miles of the Project Site. Further, the intermittent drainage provides low quality habitat for this species given the lack of deep pools within the Project Site. The perennial drainage provides breeding habitat for this species. No CRLF were observed or heard during the protocol-level surveys conducted within the Project Site. Therefore, CRLF do not occur within the Project Site. No measures are recommended.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.5. Burrowing Owl

Burrowing owl has a low potential to occur within the non-native annual grassland given the lack of suitable burrows and the steep terrain within the Project Site.

Four protocol-level surveys should be conducted during the breeding season (one site visit between February 15 and April 15, three between April 15 and July 15, one of which should be conducted after June 15), at least three weeks apart, in accordance with the 2012 *California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation* (2012 Staff Report) (CDFW 2012). The survey area includes an approximately 500-foot (150-meter) buffer around the Project Site, where access is permitted. If the surveys are negative, then a letter report would be prepared documenting the methodology and results within two weeks following the final survey. If the surveys result in negative findings, the project proponent should conduct a take avoidance survey within 30 days prior to commencement of construction, in accordance with the 2012 Staff Report. If the surveys are negative, then a letter report documenting the methodology and results will be prepared within two weeks following the results of the final survey and no additional measures are recommended.

If burrows are observed within 500 feet of the Project Site, an impact assessment should be prepared and submitted to the CDFW, in accordance with the 2012 Staff Report. If it is determined that project activities may result in impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat, the project proponent should consult with the CDFW and develop a detailed mitigation plan such that the habitat acreage, number of burrows, and burrowing owls impacted are replaced.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.6. American Badger

The non-native annual grassland within the Project Site provides a low potential for American badger given the lack of suitable burrows present.

Pre-construction surveys for American badger are recommended within 14 days prior to the start of ground disturbance. If no American badgers are observed, then a letter report documenting the results of the survey should be provided to the project proponent for their records, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If American badger is found, consultation with the CDFW is recommended to determine avoidance measures. Recommended avoidance measures include establishing a buffer around the den until it is no longer occupied. If any American badgers are present within the construction footprint, all construction should halt until the species has left the construction area on its own.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.7. Special-Status Bat Species

The trees within the riparian habitat, oak woodland, and non-native annual grassland provide roosting habitat for special-status bats.

Pre-construction surveys for special-status bat species are recommended within 14 days prior to the start of ground disturbance or tree removal. If no bats are observed, then a letter report documenting the results of the survey should be provided to the project proponent for their records, and no additional measures are recommended. If construction or tree removal does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If bats are found, an appropriate buffer zone should be established around the tree, as determined by the biologist. The biologist should mark the buffer zone with construction tape or pin flags and maintain the buffer zone until the bat is no longer roosting within the tree. Once the biologist determines that the bat is no longer roosting, the project proponent should immediately remove the tree, if anticipated for removal, or install exclusionary netting around the tree. The tree should not be removed until a biologist has determined that the tree is no longer occupied by the bats.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.8. Migratory Birds and Other Birds of Prey

Migratory birds and other birds of prey, protected under 50 CFR 10 of the MBTA and/or Section 3503 of the California Fish and Game Code have the potential to nest in the non-native annual grassland and within the trees and shrubs within the non-native annual grassland, riparian woodland, and oak woodland.

Vegetation clearing operations, including pruning or removal of trees and shrubs, should be completed between September 1 and February 14, if feasible. If vegetation removal begins during the nesting season (February 15 to August 31), a qualified biologist should conduct a pre-construction survey for active nests. The pre-construction survey should be conducted within 14 days prior to commencement of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, then a letter report should be submitted to the project proponent for their records and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional pre-construction survey is recommended.

If any active nests are located within the Project Site, an appropriate buffer zone should be established around the nests, as determined by the biologist. The biologist should mark the buffer zone with construction tape or pin flags and maintain the buffer zone until the end of breeding season or until the young have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found on the project site, a qualified biologist should monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. If establishing the typical buffer zone is impractical, the qualified biologist may reduce the buffer depending on the species and daily monitoring is recommended to ensure that the nest is not disturbed and no forced fledging occurs. Daily monitoring should occur until the qualified biologist determines that the nest is no longer occupied.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.9. Sensitive Habitats

6.9.1. Potential Jurisdictional Waters of the U.S.

Potential jurisdictional waters of the U.S. within the Project Site total approximately 1.5 acres. The Corps issued a Preliminary Jurisdictional Authorization on October 5, 2015 concurring with the 1.5 acreages of waters of the U.S.

Impact 4.8.2 of the EIR states that the project development would result in the direct filling and alteration of wetlands and waters of the U.S.

These areas are potentially regulated by Sections 404 and 401 of the Clean Water Act. Should the Proposed Project result in impacts to any waters of the U.S. and waters of the State, then a Section 404 Clean Water Act Permit should be obtained by Corps and a Section 401 Water Quality Certification should be obtained by the RWQCB prior to the issuance of a grading permit. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed should be replaced or rehabilitated on a “no-net-loss” basis in accordance with the Corps mitigation guidelines. Habitat restoration, rehabilitation, and/or replacement should be at a location and by methods agreeable to the Corps and RWQCB.

In addition, if the project results in impacts to the bed and banks of the perennial, intermittent, or ephemeral drainages or results in the removal of riparian vegetation, a Section 1600 Streambed Alteration Agreement may be required by the CDFW prior to the issuance of a grading permit.

There is not a new or substantially greater significant impact compared to the significance determination contained in the Specific Plan EIR.

6.9.2. Oak Canopy

Oak trees removed by the project proponent should be mitigated in accordance with the existing *Oak Tree Protection, Revegetation, and Monitoring Plan* (Foothill Associates 2008). The 2014 *Mitigation Status Report* estimated 14.60 acres of future canopy impacts in Village 7, which would require 14.75 acres of mitigation planting to achieve 101 percent replacement. Over 42 acres of potential planting area were identified on the Project Site.

As stated in the approved Revegetation Plan, oak canopy will be replaced to provide 101 percent of the acreage impacted at a rate of 35 trees per acre. Mitigation planting may be done on the Project Site in open space, streetscapes, or residential lots. Based on current conditions, approximately 41.04 acres of oak canopy occur within the Project Site. The project is expected to impact 20.5 acres and thus will require 20.71 acres of mitigation planting. Approximately 47 total acres of potential mitigation area has been identified in the open space areas and on residential lots (**Figure 7**). Detailed mitigation planting plans should be prepared once final construction documents are completed and prior to the start of construction. Five years of mitigation monitoring will be required after planting, in accordance with the approved revegetation and monitoring plan.

6.10. The Promontory EIR Mitigation Measures

As summarized previously, *The Promontory Specific Plan EIR* established mitigation measures for potential impacts to biological resources. The following mitigation measures are applicable to this project:

- **Mitigation Measure 4.8.1** — Implemented through mitigation in accordance with the existing *Oak Tree Protection, Revegetation, and Monitoring Plan* as discussed in **Section 6.9.2** above;

- **Mitigation Measure 4.8.2** — No specific mitigation was identified, but if the project would result in impacts to wetlands and waters of the U.S., those impacts will be addressed through the 404 permitting process;

- **Mitigation Measure 4.8.3** — This mitigation measure is implemented through the preparation of this BRA. Although the fully protected white-tailed kite and golden eagle were observed flying over the Project Site, neither was observed nesting within the Project Site. No other special-status species was observed within the Project Site. Therefore, the mitigation measure has been satisfied. The pre-construction surveys identified within this BRA would ensure that any impacts to potentially occurring special-status species are avoided or minimized, as identified within **Section 6.2** through **6.8**;

- **Mitigation Measure 4.8.4** — Landscape design guidelines have been developed and are enforced by the Promontory Home-Owner's Association; and

- **Mitigation Measure 4.8.7** — This mitigation measure is implemented through mitigation measures 4.8.1, 4.8.3 and 4.8.4 of the EIR.

There is not a new or substantially greater significant impact compared to the significance determination contained in the EIR.

6.11. Summary of Avoidance and Minimization Measures

- If wetlands, waterways, or riparian areas will be impacted by the project, apply for appropriate permits from the Corps, the RWQCB, and/or the CDFW.

- Conduct clearing and tree and shrub removal operations between September 1 and February 14 to minimize potential impacts to nesting birds.

- If construction begins or trees are anticipated for removal during the nesting season (February 15 – August 31), conduct a pre-construction survey for active bird nests within the Project Site within 14 days prior to initiation of construction activities.

- Consult with the USFWS if impacts are anticipated to occur within 100 feet of elderberry shrubs, which are hosts to VELB.

- Conduct four protocol-level surveys for burrowing owl during the breeding season (one site visit between February 15 and April 15, three between April 15 and July 15, one of which should be conducted after June 15, at least three weeks apart).

- Conduct a pre-construction survey for roosting bats within the Project Site within 14 days prior to initiation of construction activities or tree removal.

- Within 14 days prior to the initiation of construction activities, conduct a pre-construction survey for American badger and western pond turtle.

- Implement oak woodland mitigation, in accordance with the existing *Oak Tree Protection, Revegetation, and Monitoring Plan*.

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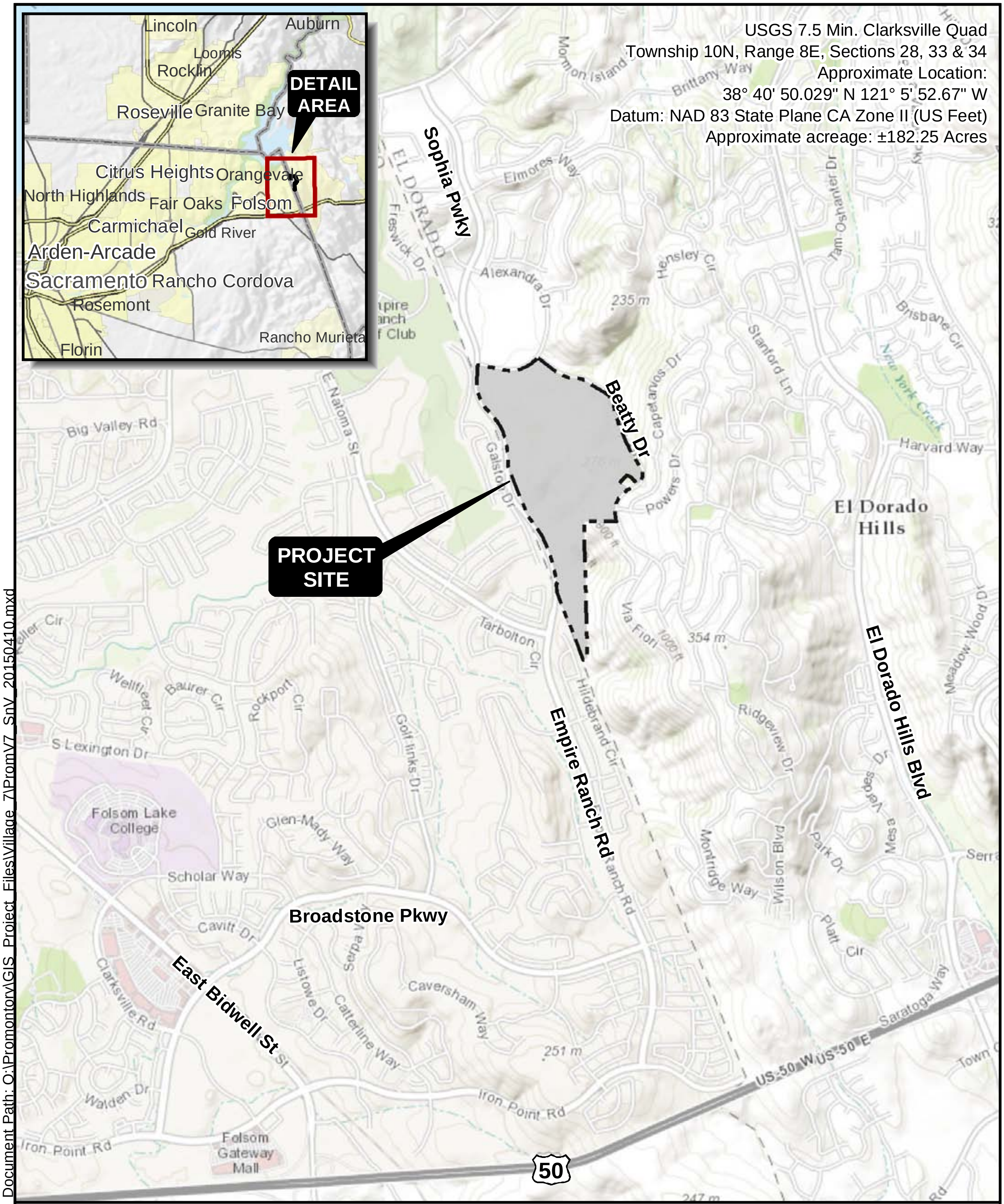

USGS 7.5 Min. Clarksville Quad
Township 10N, Range 8E, Sections 28, 33 & 34
Approximate Location:
38° 40' 50.029" N 121° 5' 52.67" W
Datum: NAD 83 State Plane CA Zone II (US Feet)
Approximate acreage: ±182.25 Acres

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PROMONTORY VILLAGE 7 SITE AND VICINITY

FOOTHILL ASSOCIATES
ENVIRONMENTAL CONSULTING • PLANNING • LANDSCAPE ARCHITECTURE
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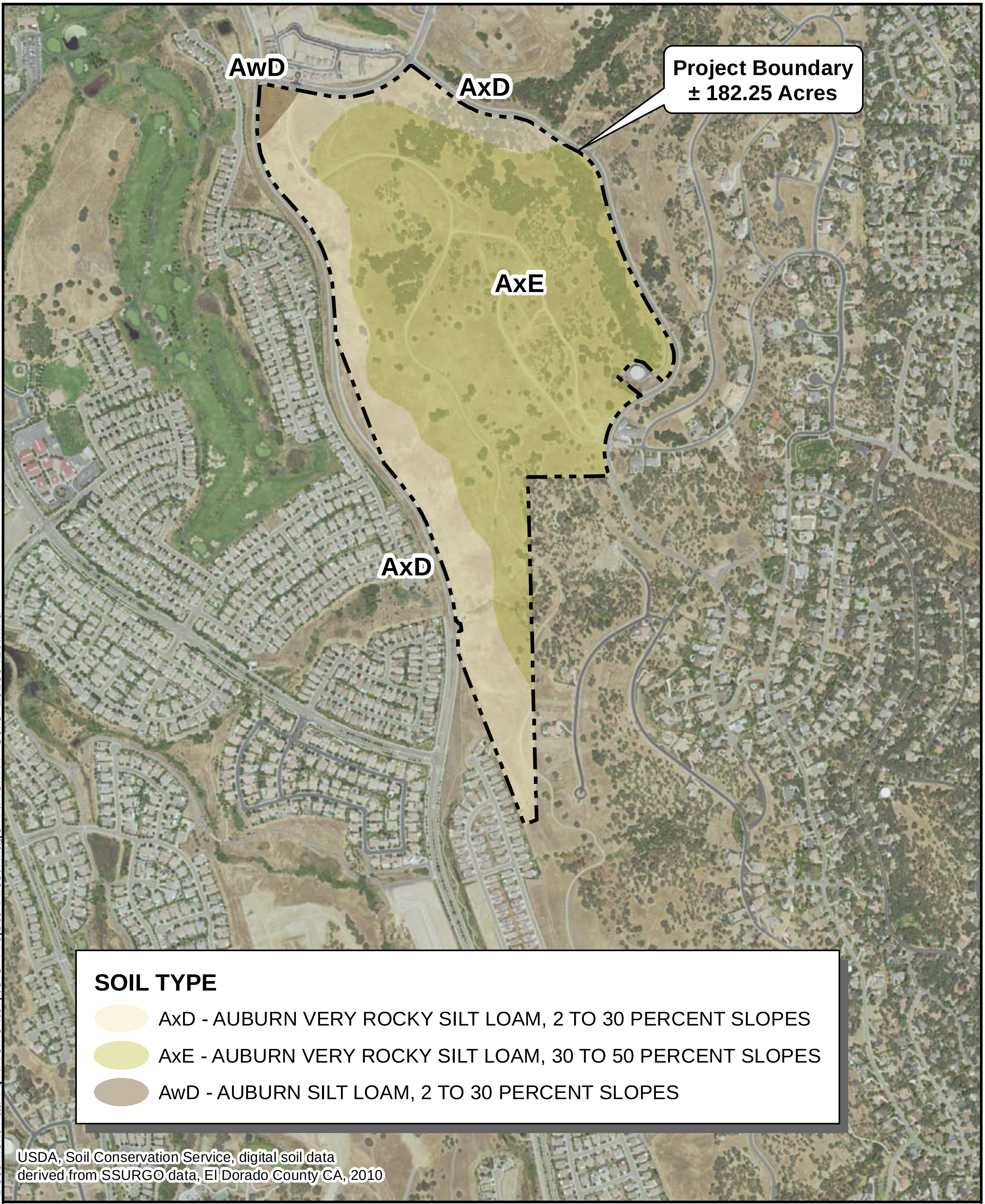
N

0 0.25 0.5
Miles
1 in = 0.5 miles

Drawn By: MUB
Date: 07/16/2015

FIGURE 1



SOIL TYPE

▨	AxD - AUBURN VERY ROCKY SILT LOAM, 2 TO 30 PERCENT SLOPES
▨	AxE - AUBURN VERY ROCKY SILT LOAM, 30 TO 50 PERCENT SLOPES
▨	AwD - AUBURN SILT LOAM, 2 TO 30 PERCENT SLOPES

USDA, Soil Conservation Service, digital soil data
derived from SSURGO data, El Dorado County CA, 2010

Document Path: O:\Promontory\GIS Project Files\Village 7\PromV7_Soils_20150410.mxd

PROMONTORY VILLAGE 7 SOILS

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N

0 500 1,000
Feet
1 inch = 1,000 feet

Drawn By: MUB
Date: 07/17/2015

FIGURE 2

Document Path: O:\Promontory\GIS_Project_Files\Village_7\PromV7_BioComms_20160609.mxd

PROMONTORY VILLAGE 7 BIOLOGICAL COMMUNITIES

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N

0 350 700
Feet
1 inch = 700 feet

Drawn By: MUB
Date: 08/04/2016

FIGURE 3

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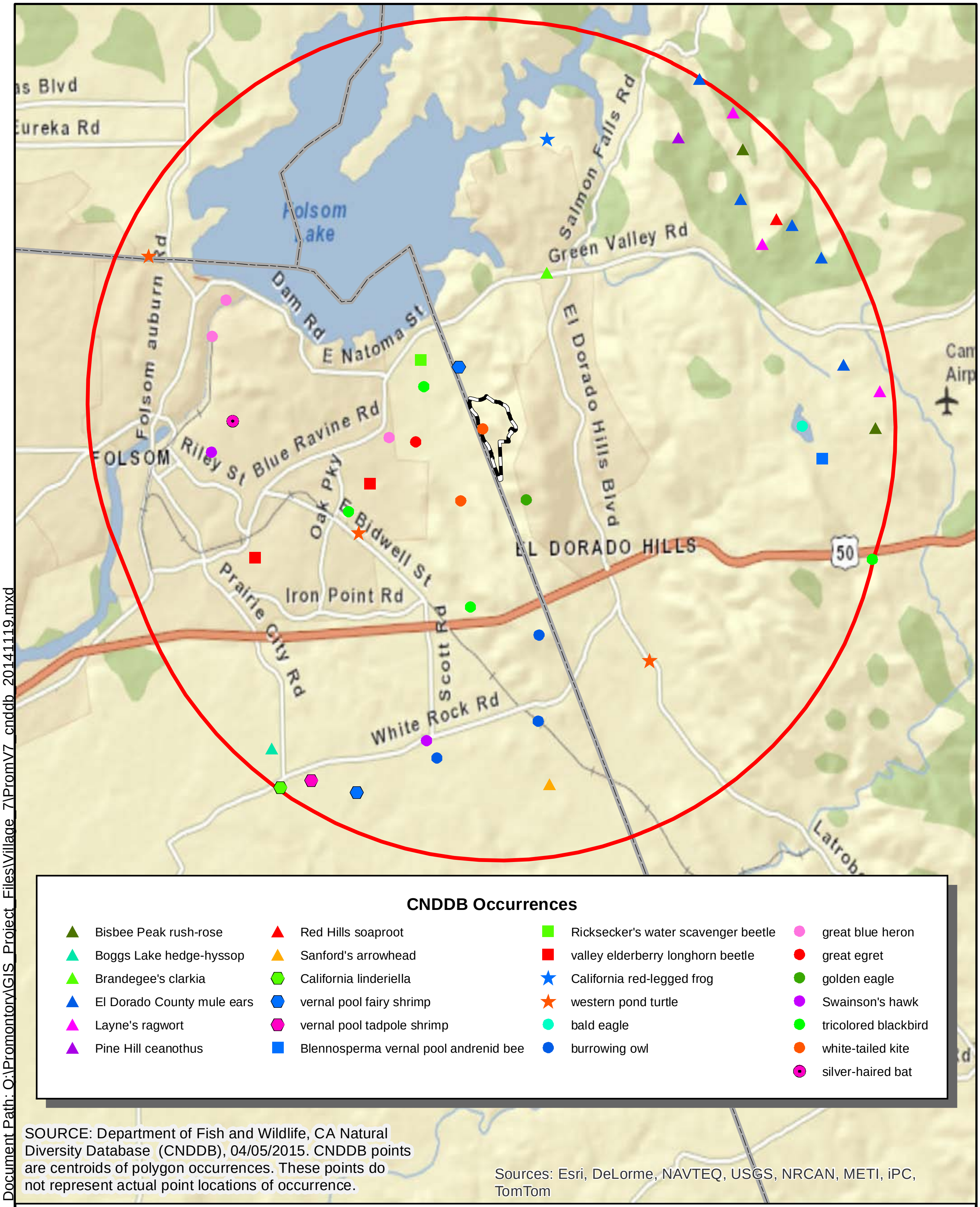

SOURCE: Department of Fish and Wildlife, CA Natural Diversity Database (CNDDB), 04/05/2015. CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

Sources: Esri, DeLorme, NAVTEQ, USGS, NRCAN, METI, iPC, TomTom

PROMONTORY VILLAGE 7 CNDDB

FOOTHILL ASSOCIATES
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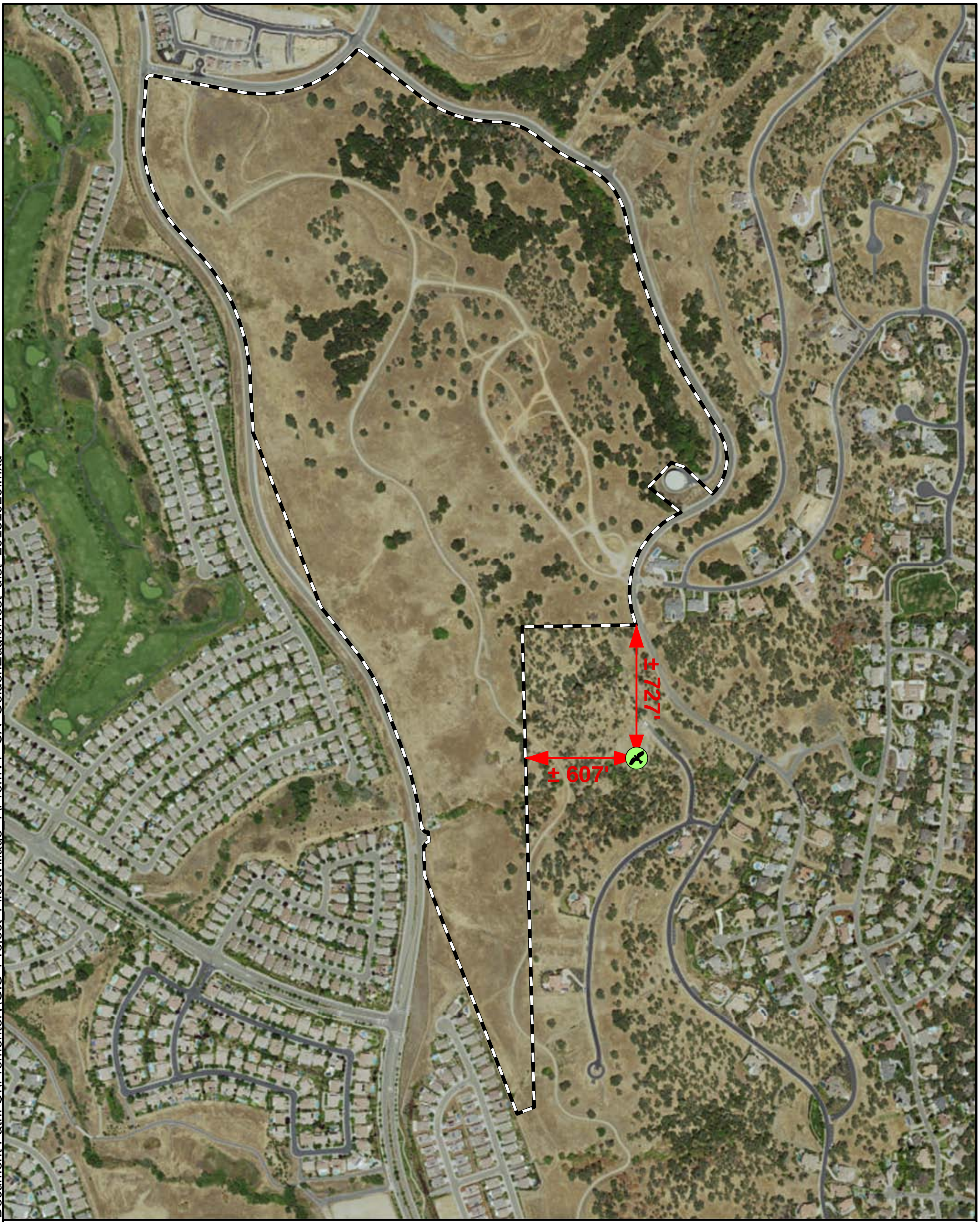
N

0 1 2
SCALE IN MILES

Drawn By: MUB
Date: 07/07/2015

FIGURE 4

Document Path: O:\Promontory\GIS_Project_Files\Village_7\PromV7_CA_GoldenEagleNest_dist_20151026.mxd



PROMONTORY VILLAGE 7 GOLDEN EAGLE NEST LOCATION

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N

0 500 1000
Feet

Drawn By: MUB
Date: 10/26/2015

FIGURE 5

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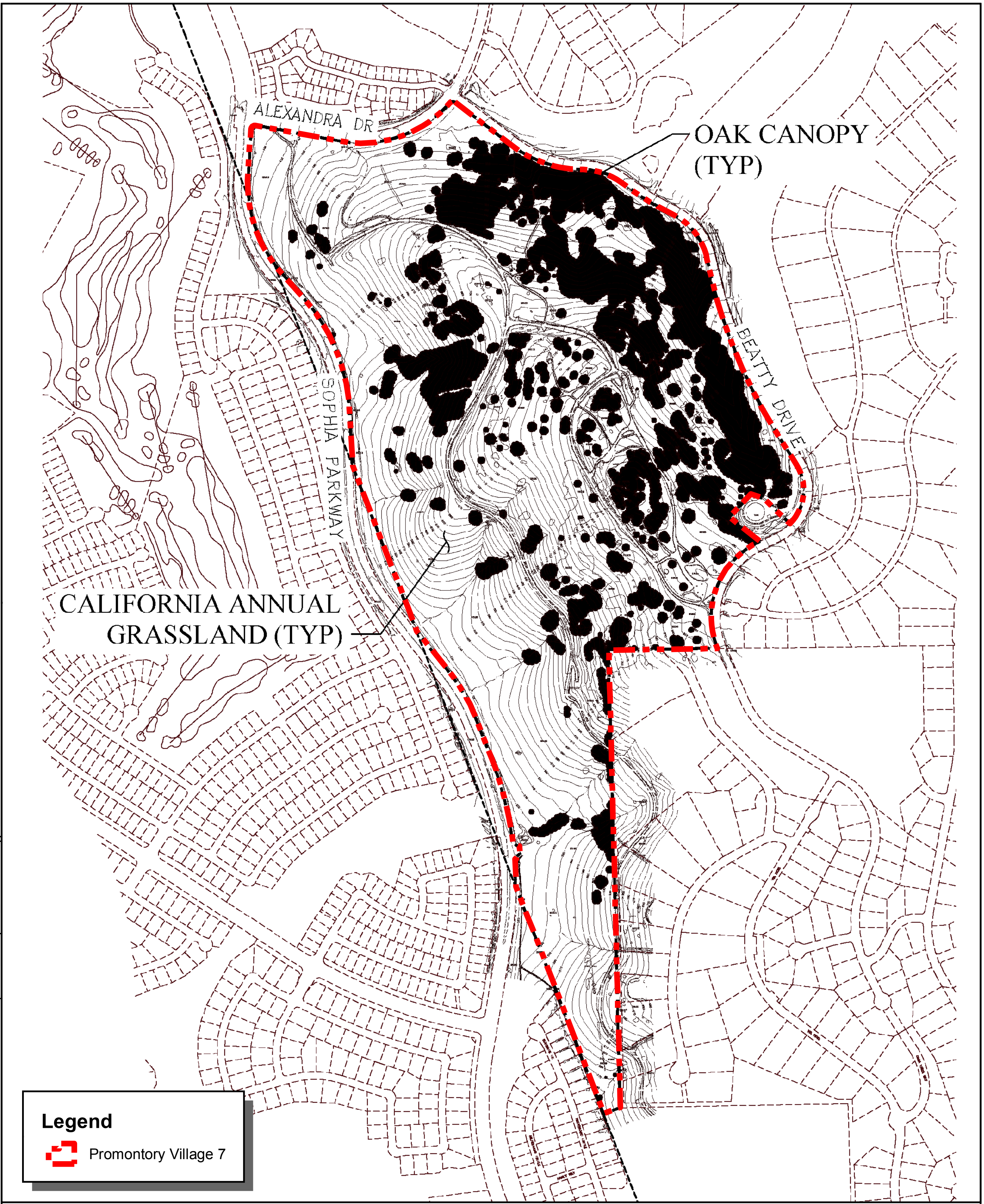

PROMONTORY VILLAGE 7 BIOLOGICAL COMMUNITIES IN PROMONTORY VILLAGE

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N

0 500 1,000
Feet
1 inch = 750 feet

Drawn By: MUB
Date: 11/04/2015

FIGURE 6

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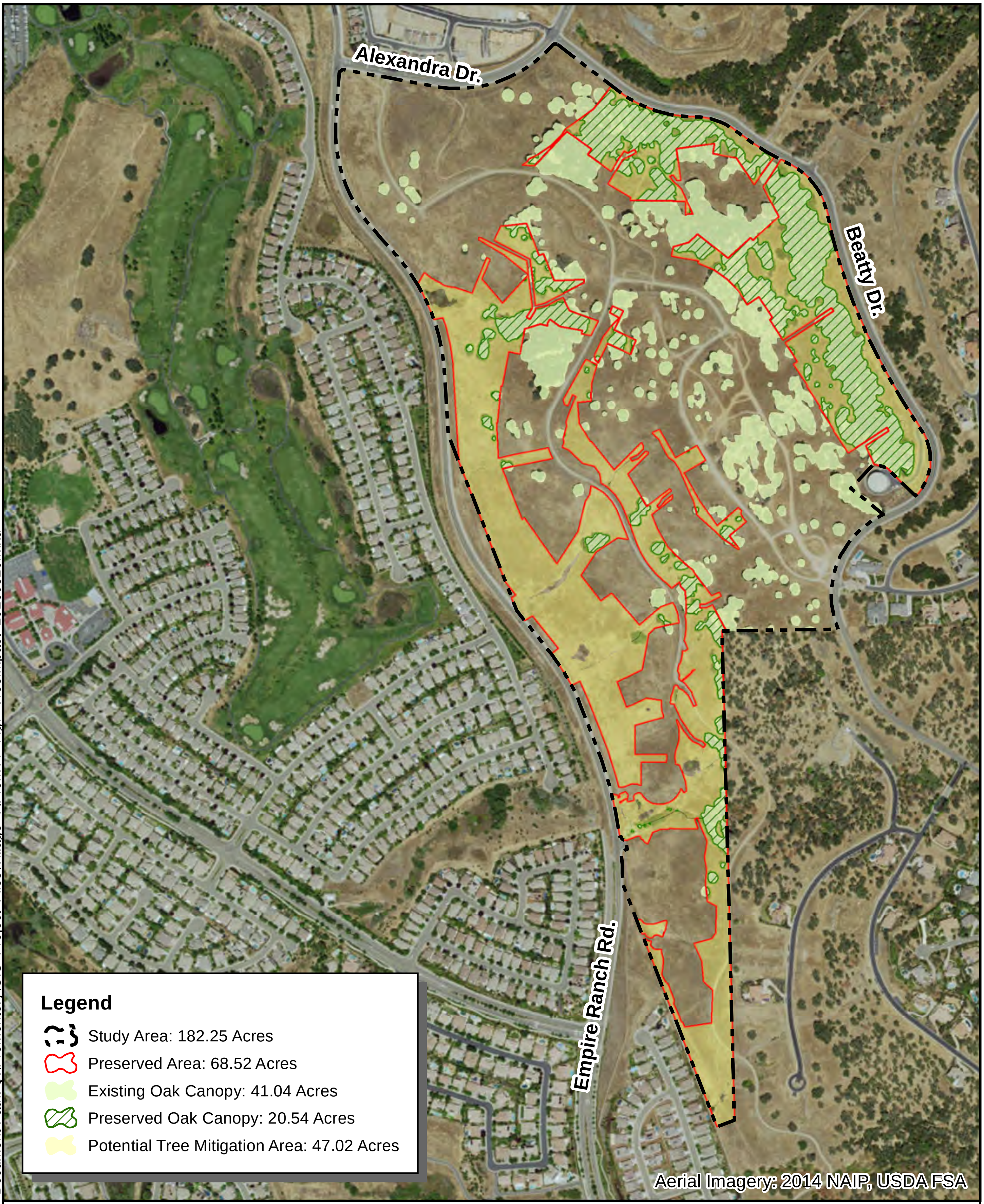

OAK CANOPY IMPACTS AND POTENTIAL MITIGATION AREAS

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© 2016

N

0 350 700
Feet
1 inch = 700 feet

Drawn By: MMB
Date: 08/10/2016

FIGURE 7

PROMONTORY VILLAGE 7

Appendix A — WOUS Avoidance Exhibit

W.O.U.S. AVOIDANCE EXHIBIT - OVERALL

PROMONTORY VILLAGE 7

COUNTY OF EL DORADO

JUNE, 2016

STATE OF CALIFORNIA

LEGEND

— — — —	PROJECT BOUNDARY	177.0 AC
32 UNITS	MEDIUM LOT	8.2 AC
50 UNITS	LARGE LOT	39.4 AC
49 UNITS	HILLSIDE LARGE LOT DEVELOPMENT ENVELOPE	37.9 AC

TOTAL RESIDENTIAL UNITS - 131

Ⓖ	GATE
(GE)	GATE EXIT ONLY

PEDESTRIAN CIRCULATION

▪▪▪▪▪▪▪	SIDEWALK

🟩	HILLSIDE LARGE LOT PRIVATE OPEN SPACE	37.9 AC
🟩	OPEN SPACE	33.0 AC
🟩	LANDSCAPE LOTS	5.8 AC

TOTAL OPEN SPACE / LANDSCAPE - 76.7 AC

≈	W.O.U.S.
🟥	RIPARIAN AREA
E	ELDERBERRY SHRUB W/ 100' SETBACK

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

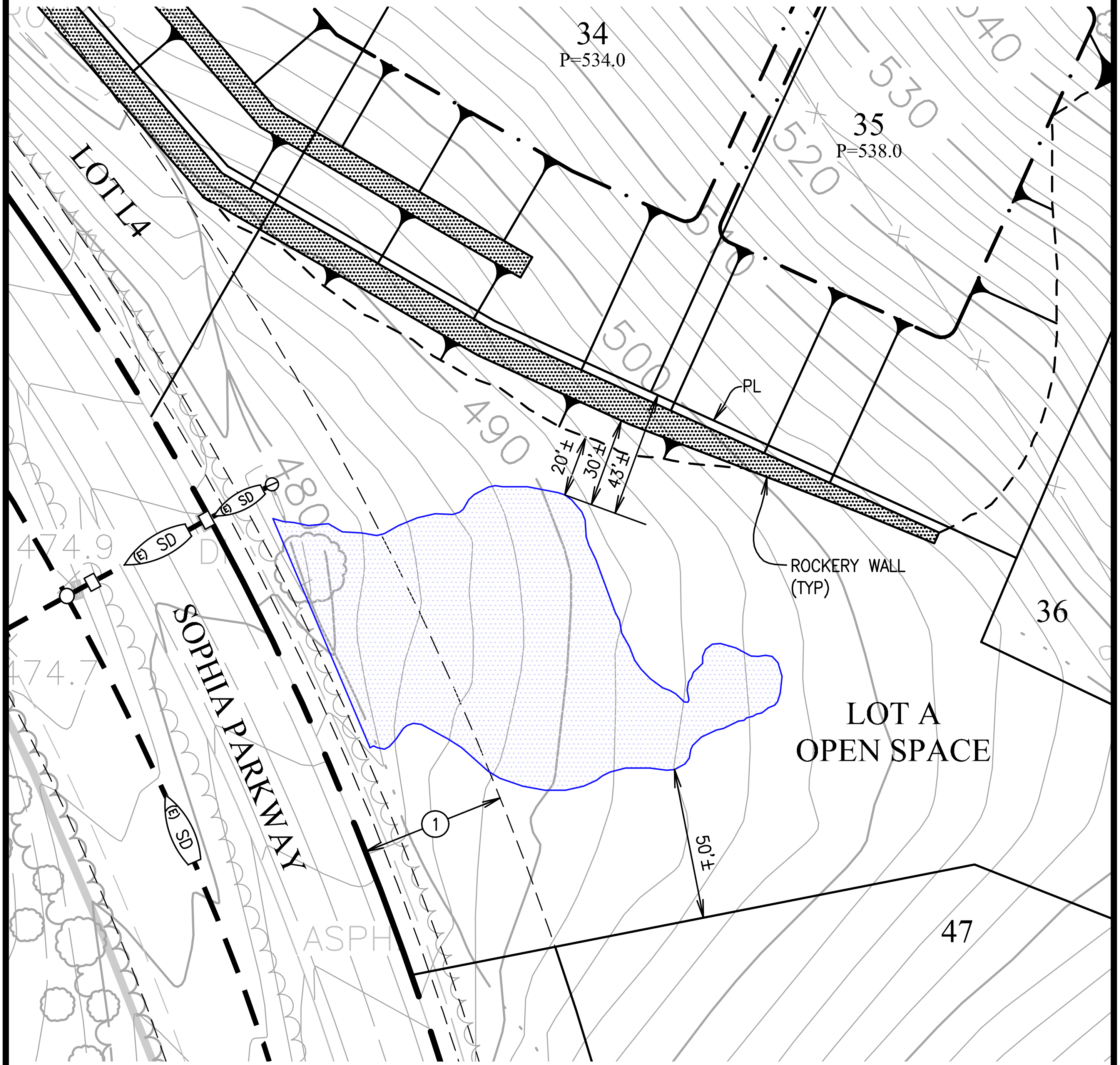
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

LEGEND

▨ W.O.U.S.

DETAIL A - SHEET 1 OF 11

0 25’ 50’
SCALE: 1” = 50’



KEY NOTE:

① (E) LANDSCAPE MAINTENANCE, SLOPE AND DRAINAGE EASEMENT PER DOC. 2005–19789

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PROMONTORY VILLAGE 7
W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

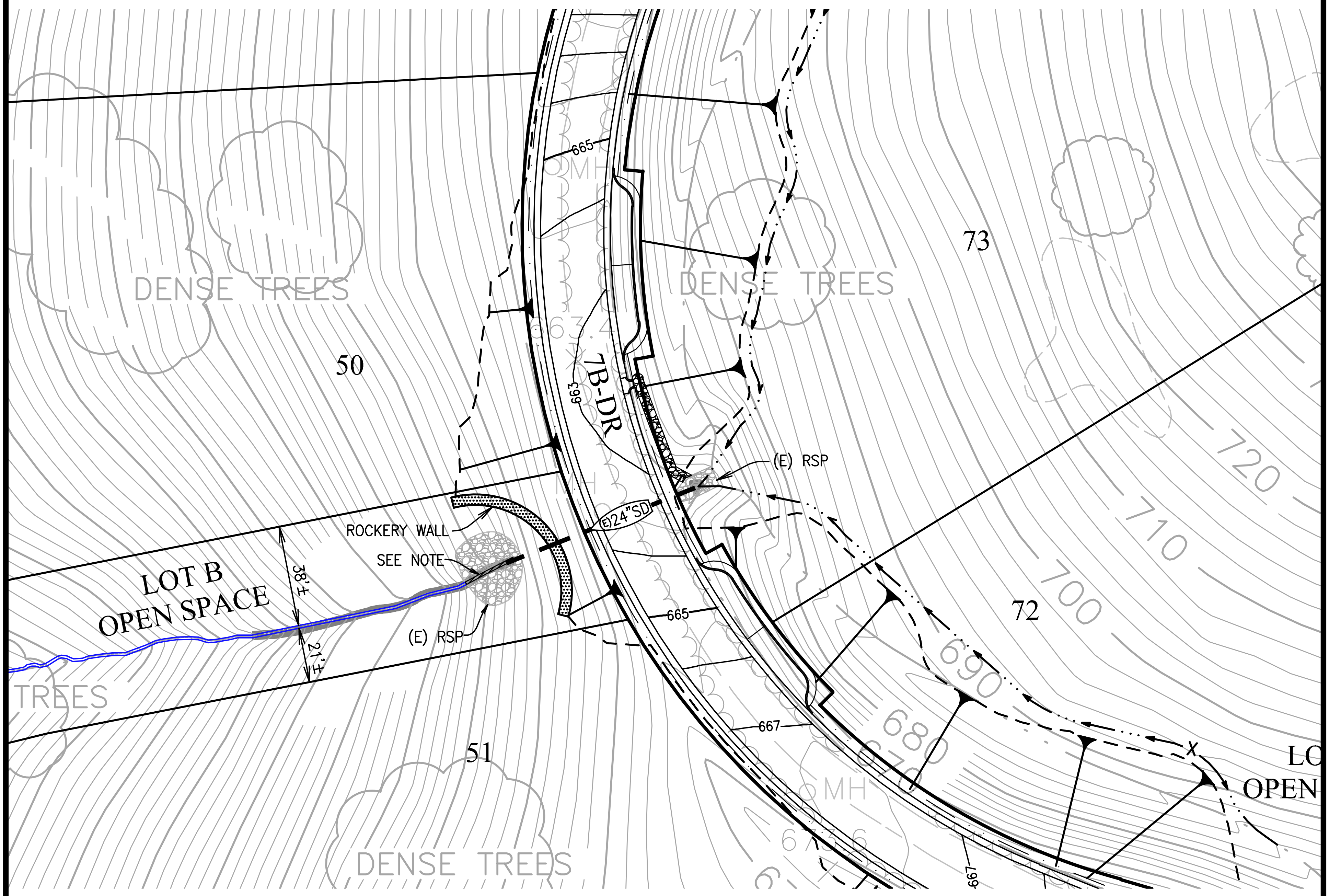
0 25' 50'
SCALE: 1" = 50'

LEGEND

W.O.U.S.

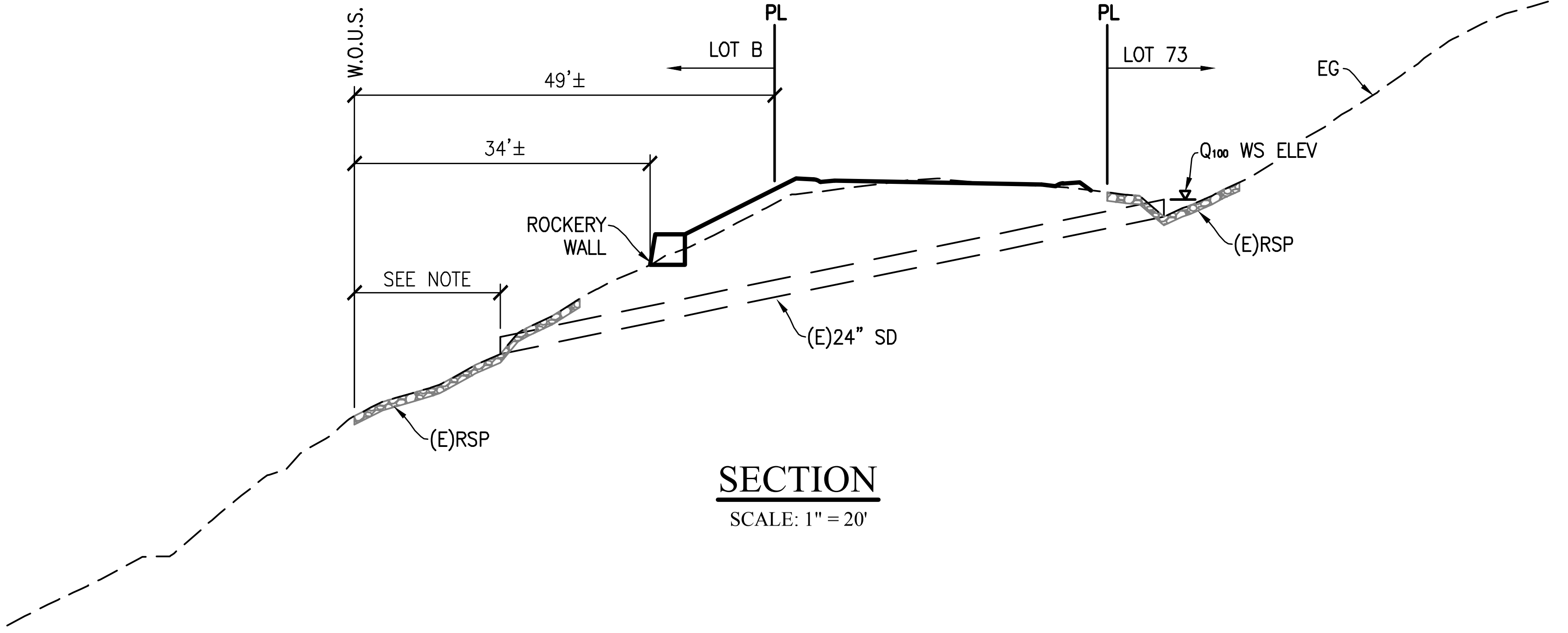
APPROX LIMITS OF
Q_{100} WATER SURFACE

DETAIL B - SHEET 2 OF 11



PLAN VIEW
SCALE: 1" = 50'

NOTE: IMPACTED AND COMPENSATED FOR UNDER DEPARTMENT OF THE ARMY PERMIT 199001102 FOR THE PROMONTORY.



SECTION
SCALE: 1" = 20'

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M:\15-008-001\PLANNING\EXHIBITS\WOUS\15-008-001-PR-W.O.U.S-DETAILS.dwg, 6/29/2016 3:58:47 PM, kwipf, 1:1

PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

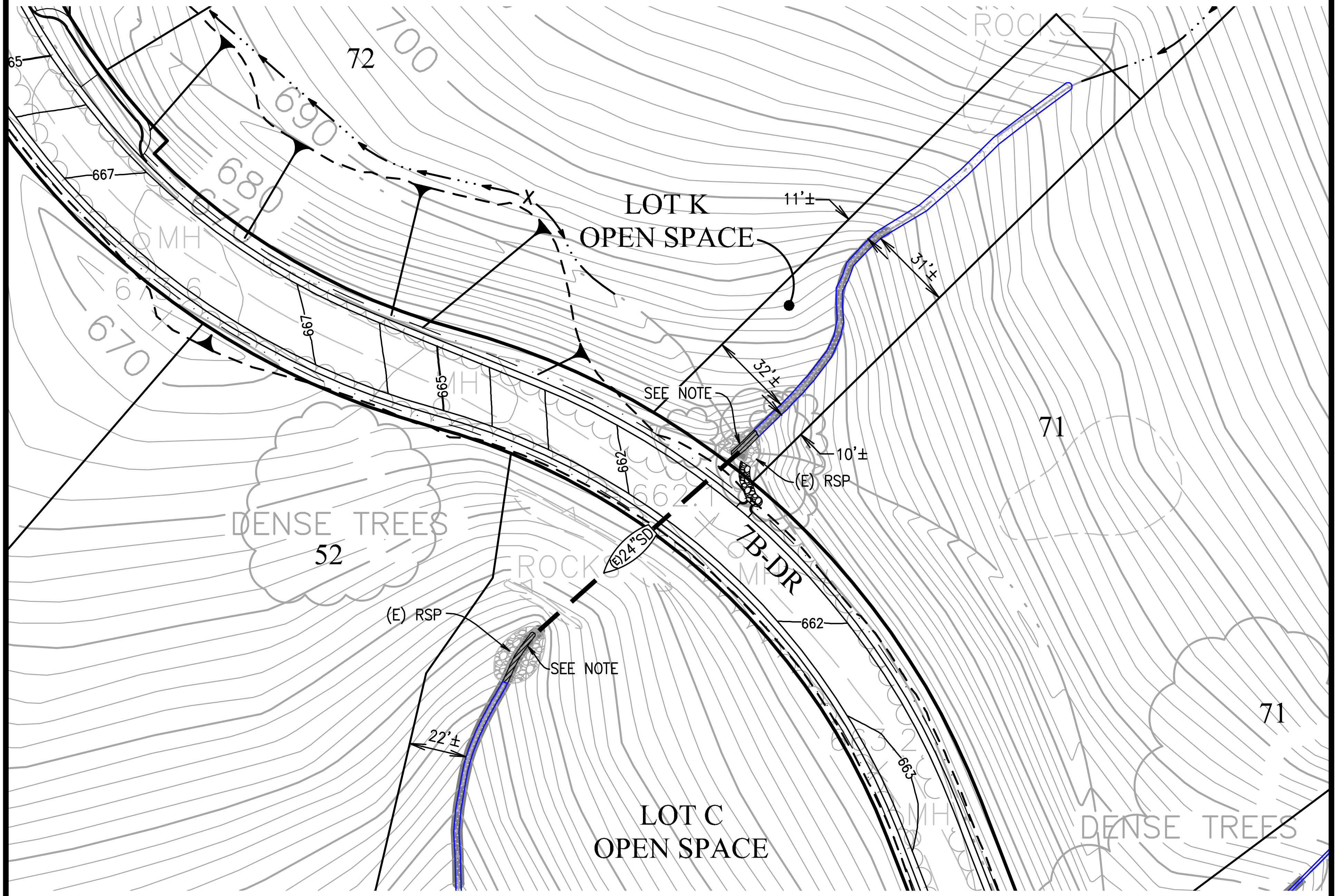
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

LEGEND

▨	W.O.U.S.
▨	APPROX LIMITS OF Q_{100} WATER SURFACE

0 25' 50'
SCALE: 1" = 50'

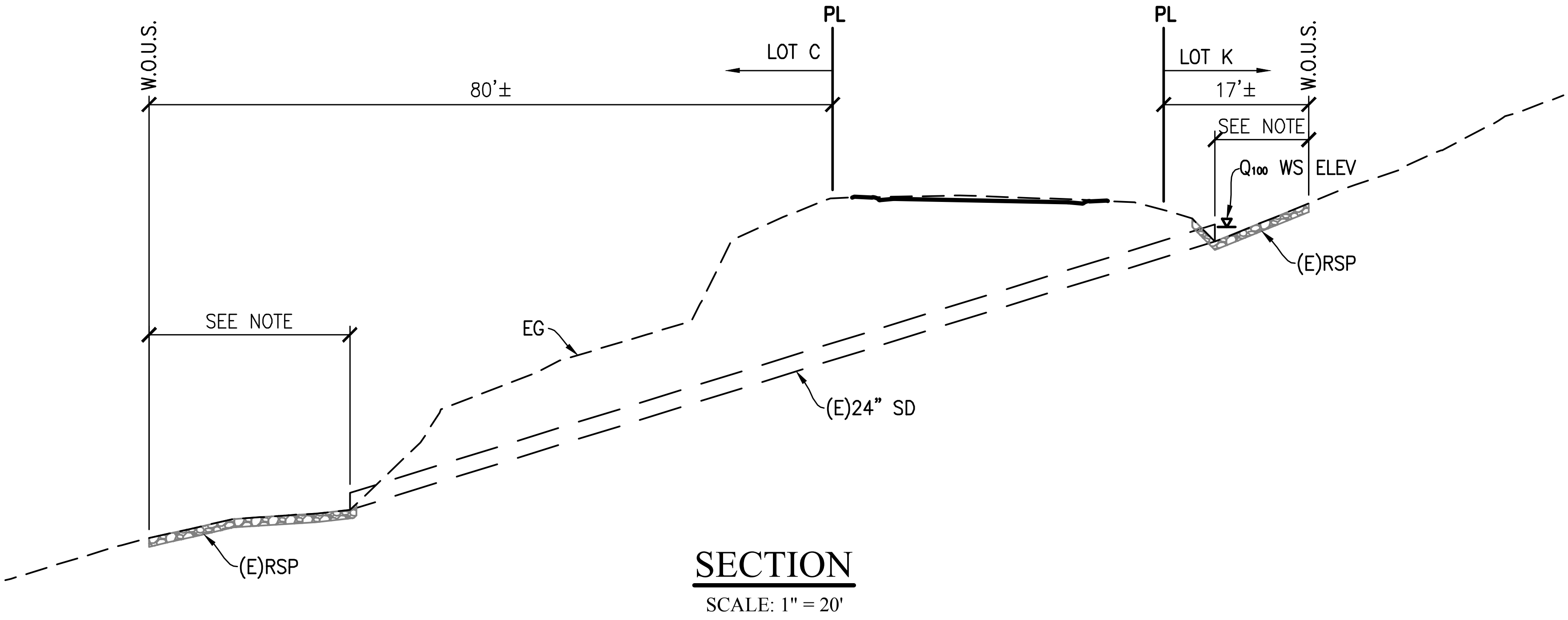
DETAIL C - SHEET 3 OF 11



PLAN VIEW

SCALE: 1" = 50'

NOTE: IMPACTED AND COMPENSATED FOR UNDER DEPARTMENT OF THE ARMY PERMIT 199001102 FOR THE PROMONTORY.



SECTION

SCALE: 1" = 20'

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

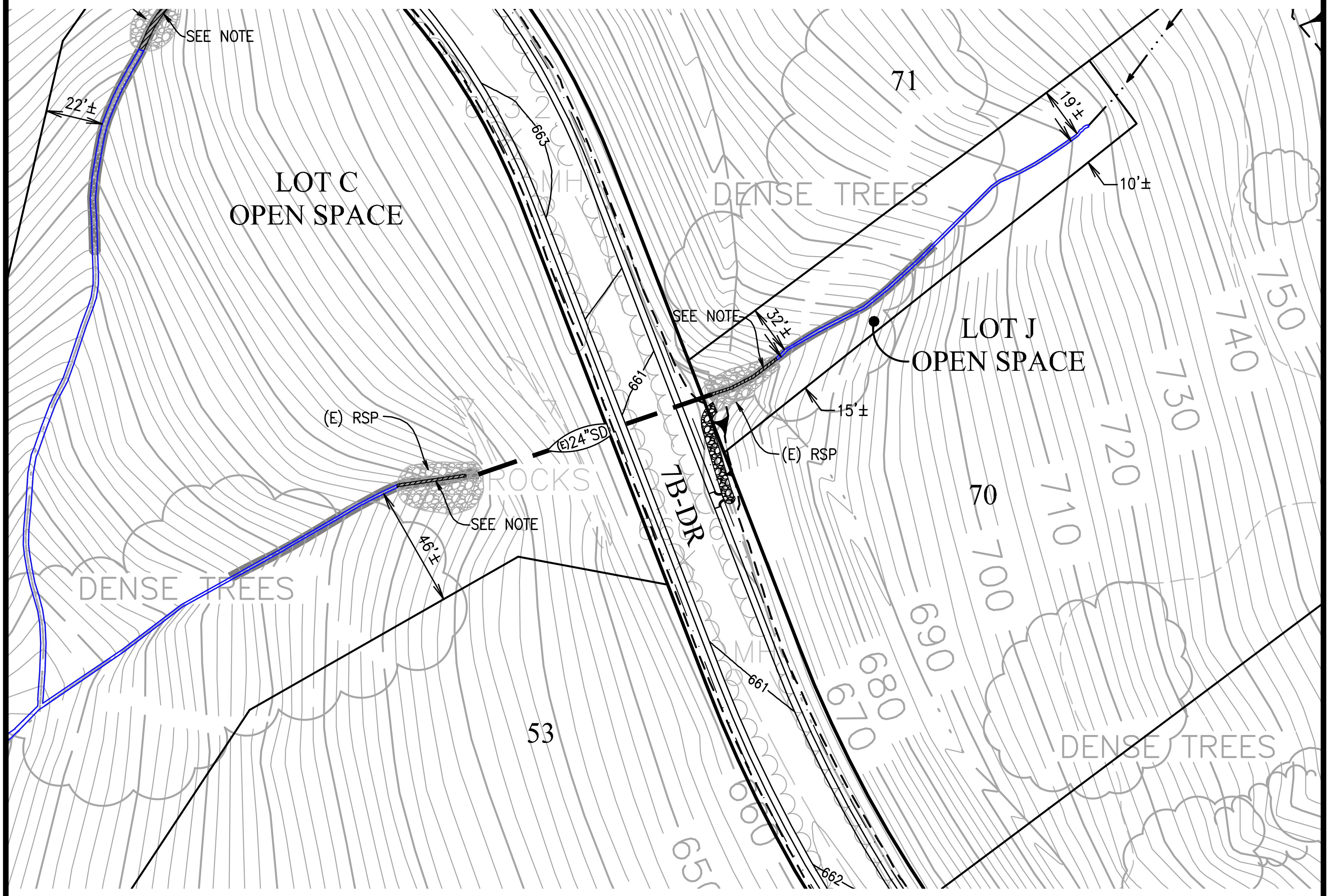
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

0 25' 50'
SCALE: 1" = 50'

LEGEND

- W.O.U.S.
- APPROX LIMITS OF Q_{100} WATER SURFACE

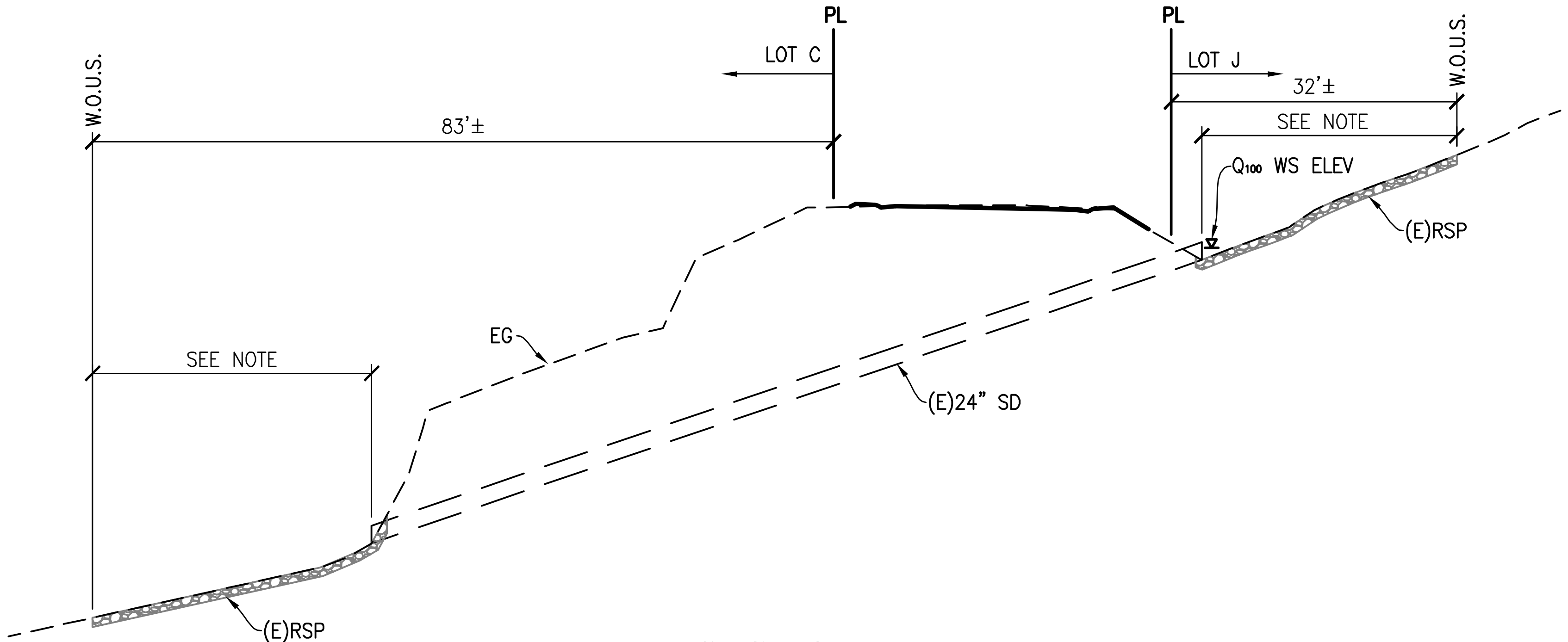
DETAIL D - SHEET 4 OF 11



PLAN VIEW

SCALE: 1" = 50'

NOTE: IMPACTED AND COMPENSATED FOR UNDER DEPARTMENT OF THE ARMY PERMIT 199001102 FOR THE PROMONTORY.



SECTION

SCALE: 1" = 20'

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

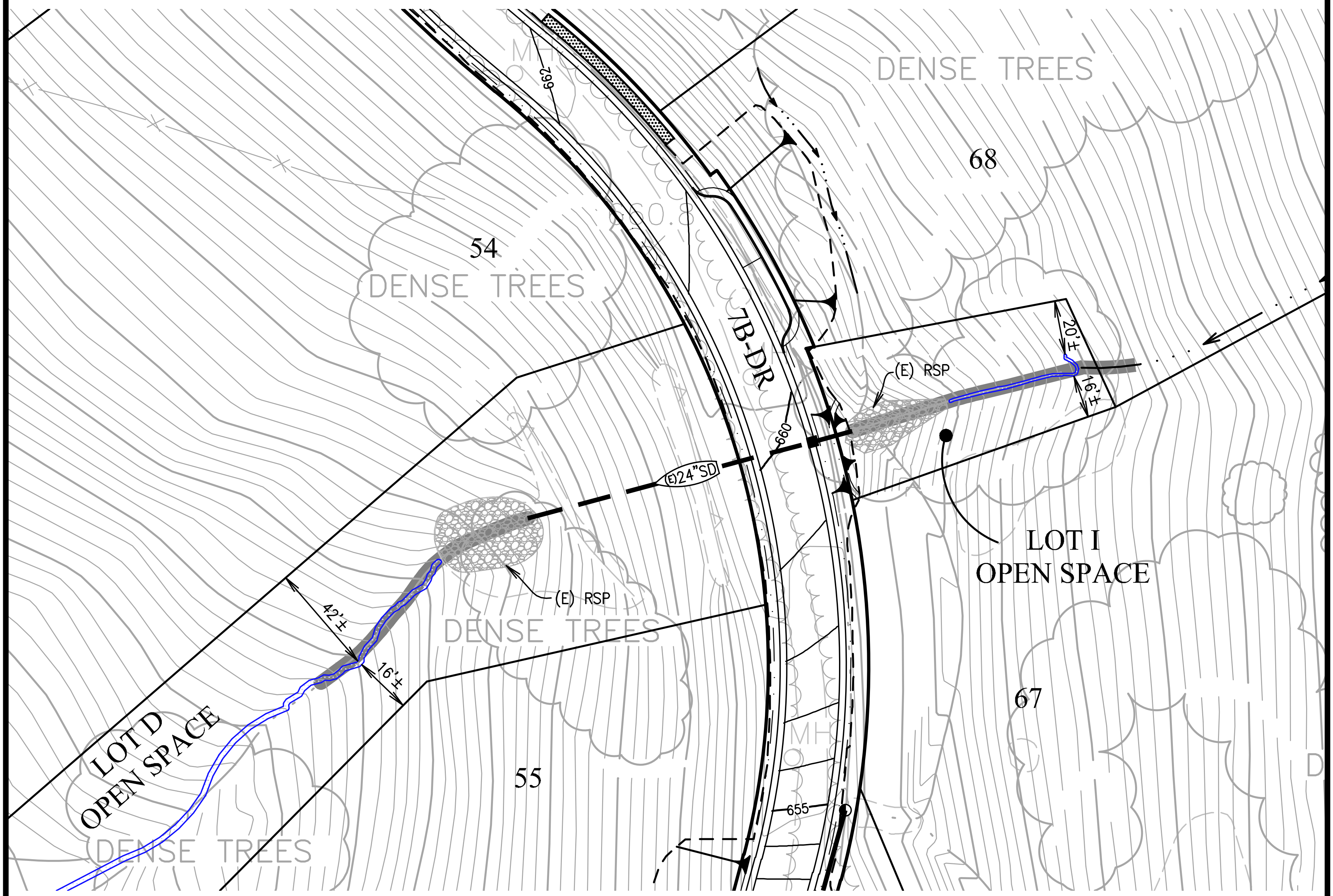
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

0 25' 50'
SCALE: 1" = 50'

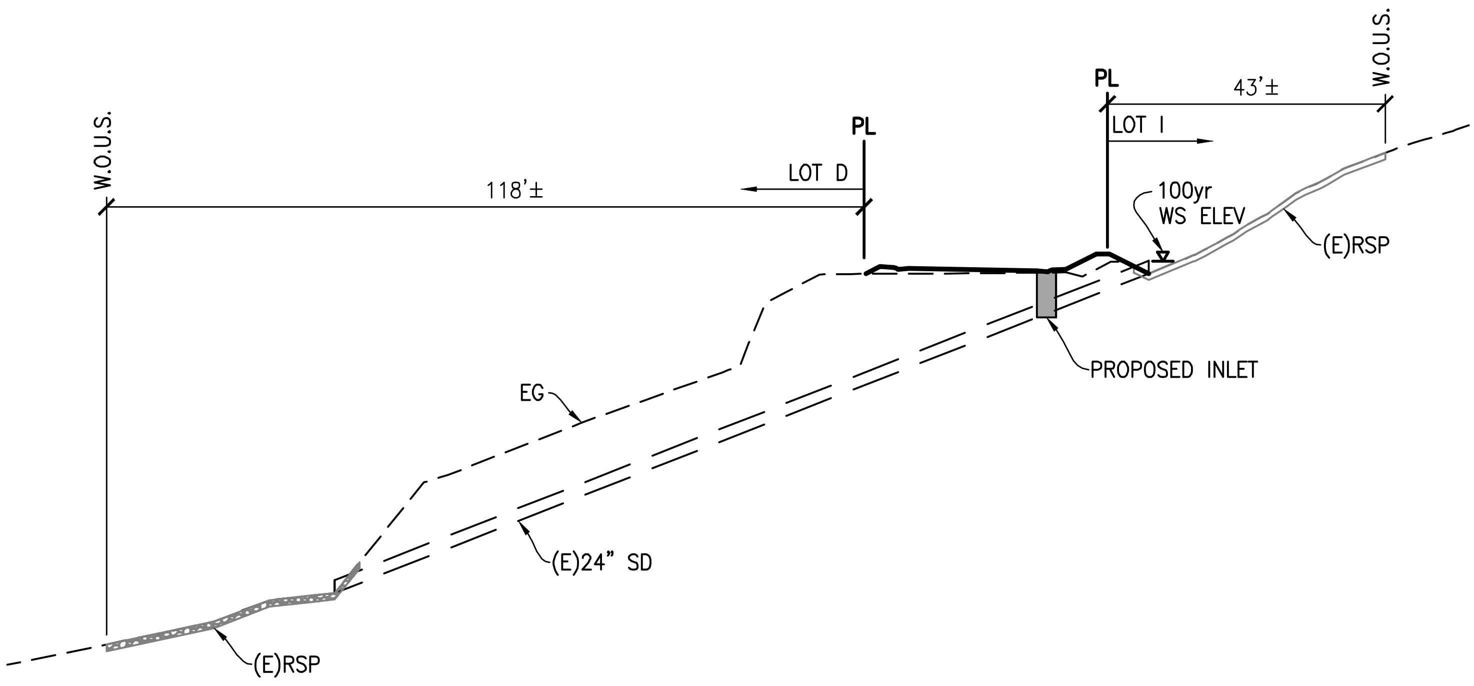
LEGEND

- W.O.U.S.
- APPROX LIMITS OF Q_{100} WATER SURFACE

DETAIL E - SHEET 5 OF 11



PLAN VIEW
SCALE: 1" = 50'



SECTION
SCALE: 1" = 30'

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

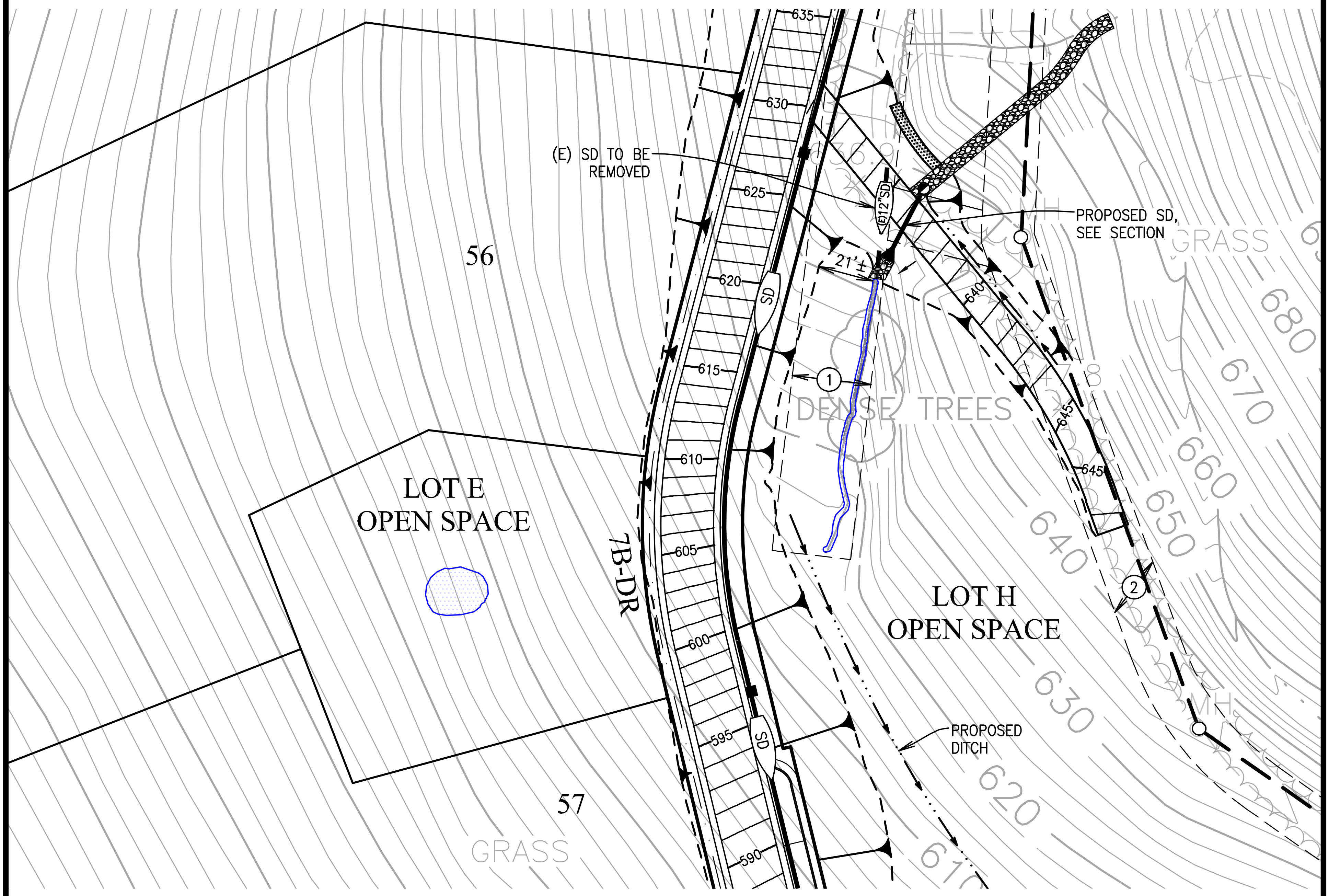
0 25' 50'
SCALE: 1" = 50'

LEGEND

▨ W.O.U.S.

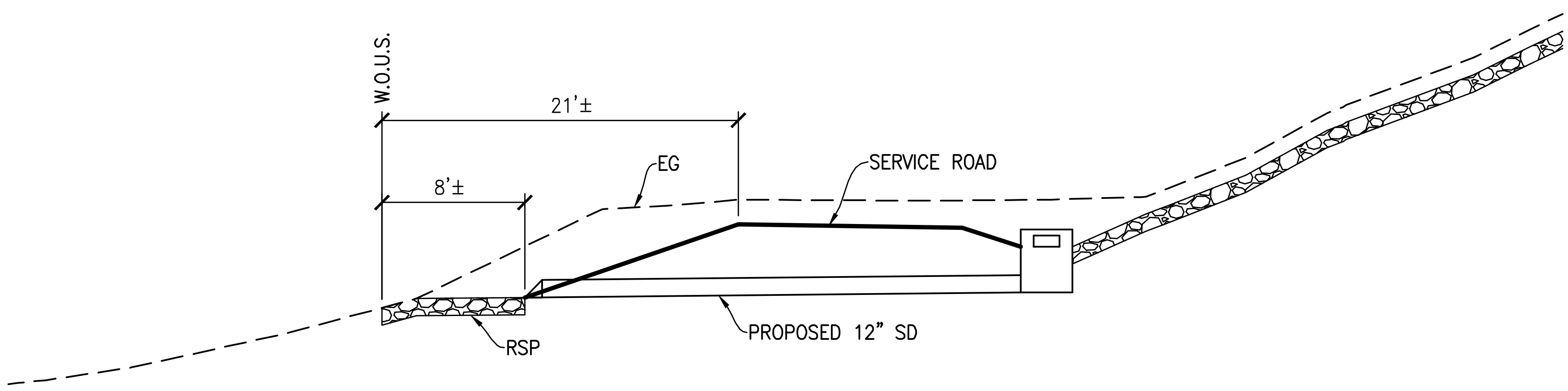
▨ APPROX LIMITS OF Q_{100} WATER SURFACE

DETAIL F - SHEET 6 OF 11



PLAN VIEW

SCALE: 1" = 50'



SECTION

SCALE: 1" = 10'

KEY NOTE:

① (E) 30' SEWER & WATER EASEMENT
② (E) 20' SEWER EASEMENT

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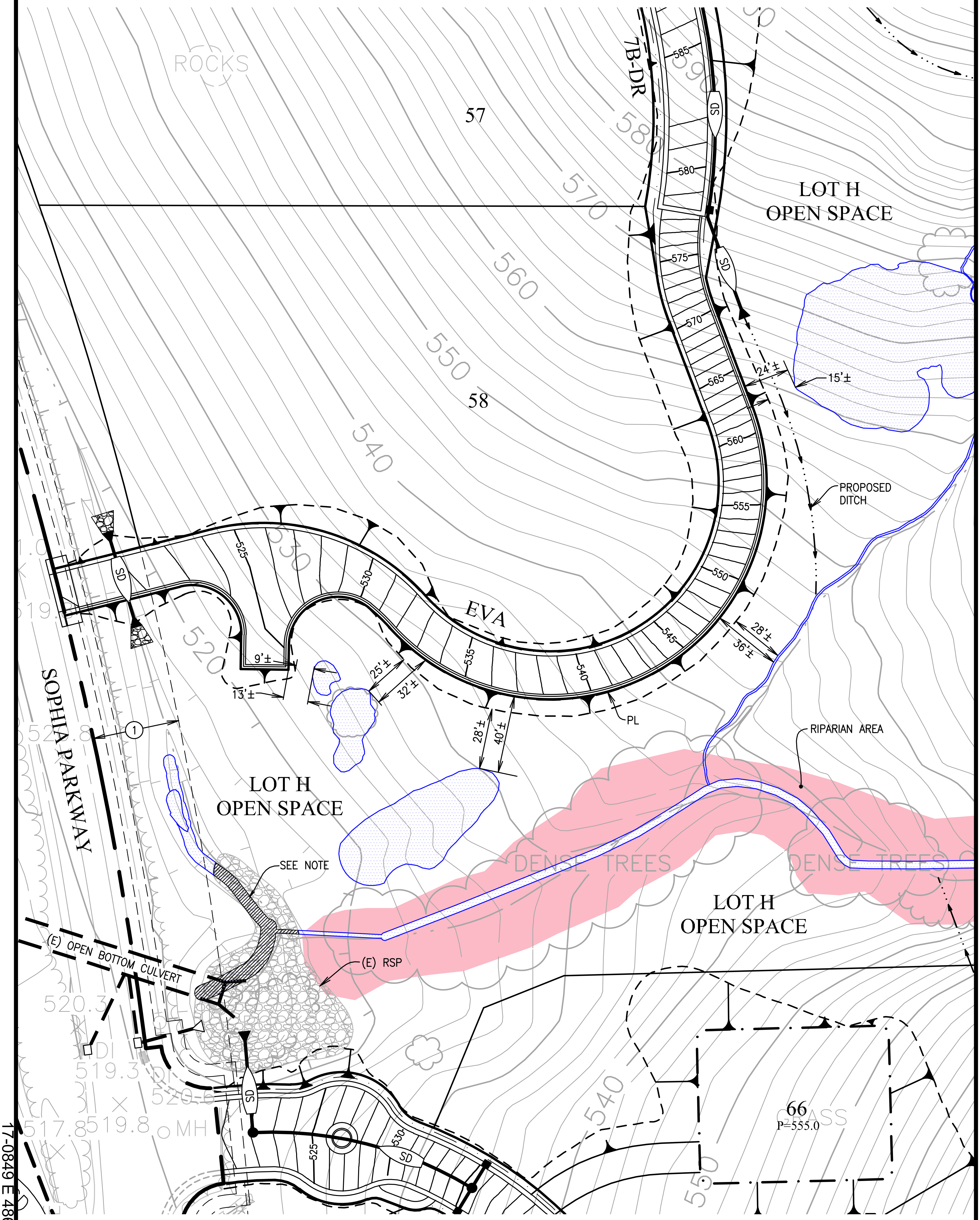
PROMONTORY VILLAGE 7
W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

0 25' 50'
SCALE: 1" = 50'

LEGEND

🟦	W.O.U.S.

DETAIL G - SHEET 7 OF 11



KEY NOTE:

① (E) LANDSCAPE MAINTENANCE, SLOPE AND DRAINAGE EASEMENT PER DOC. 2005–19789

NOTE: IMPACTED AND COMPENSATED FOR UNDER DEPARTMENT OF THE ARMY PERMIT 199001102 FOR THE PROMONTORY.

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

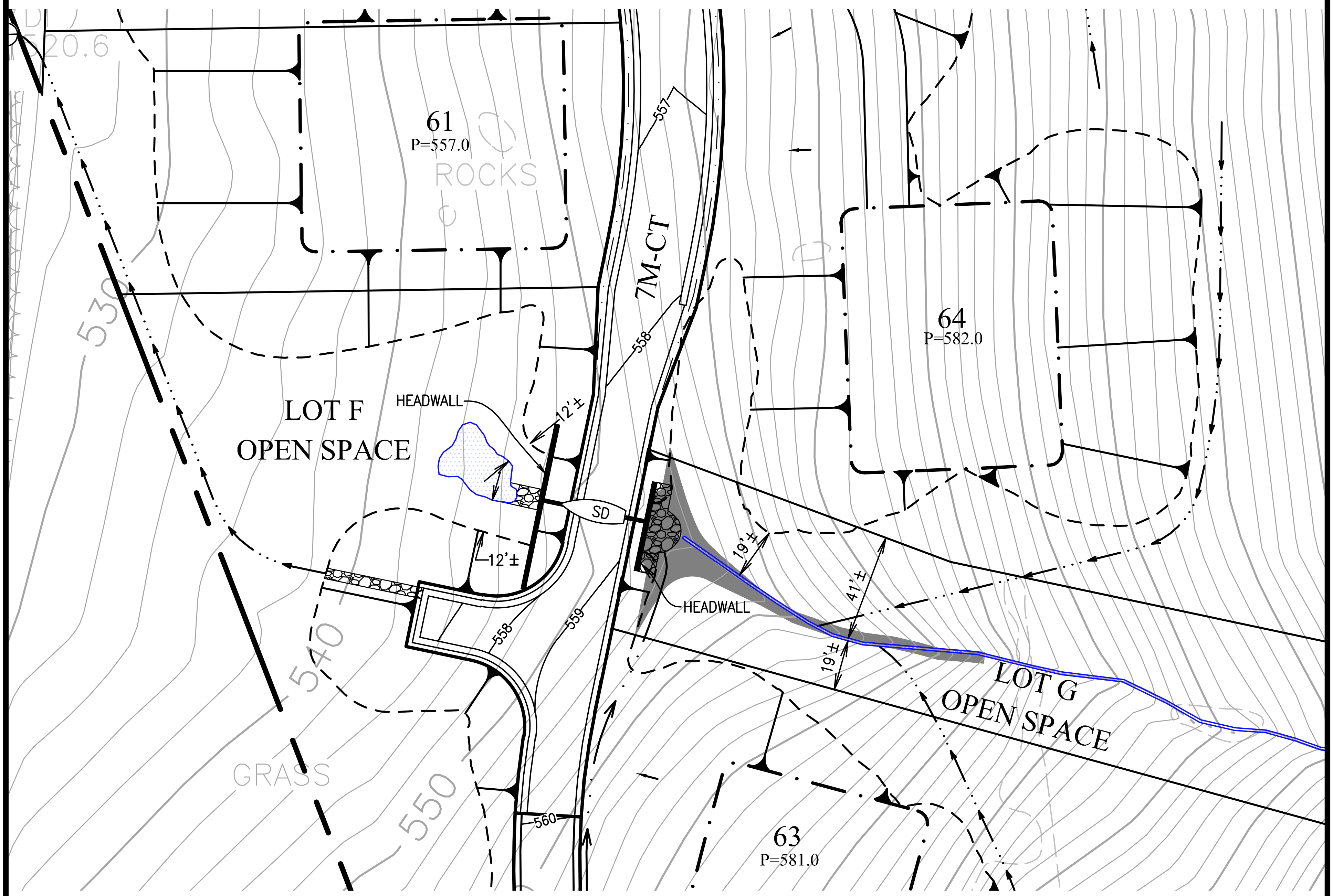
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

0 25' 50'
SCALE: 1" = 50'

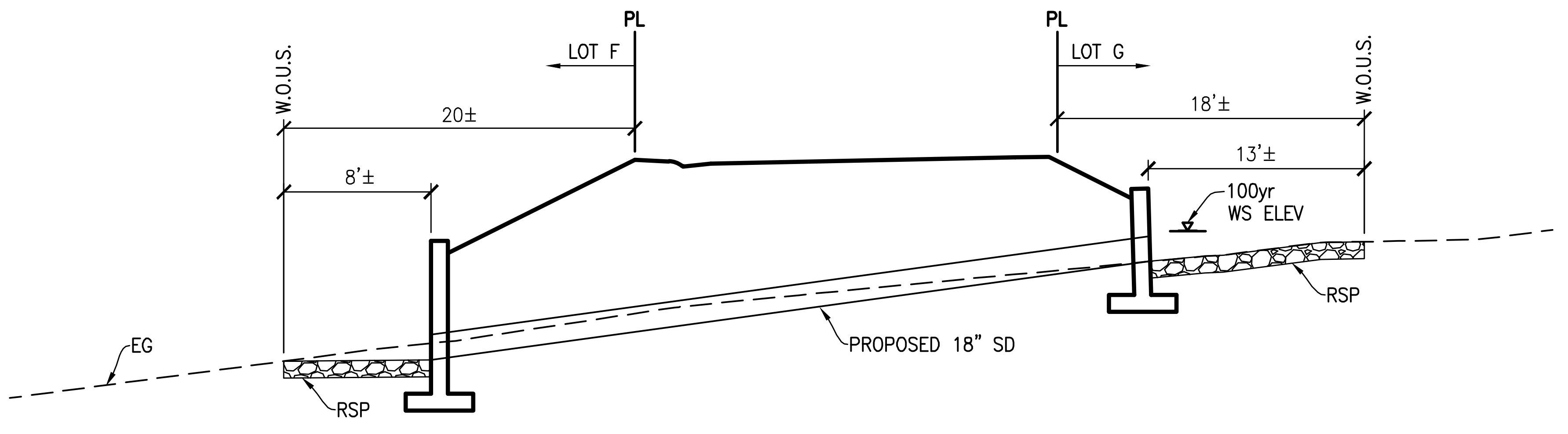
LEGEND

- W.O.U.S.
- APPROX LIMITS OF Q_{100} WATER SURFACE

DETAIL H - SHEET 8 OF 11



PLAN VIEW
SCALE: 1" = 50'



SECTION
SCALE: 1" = 10'

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

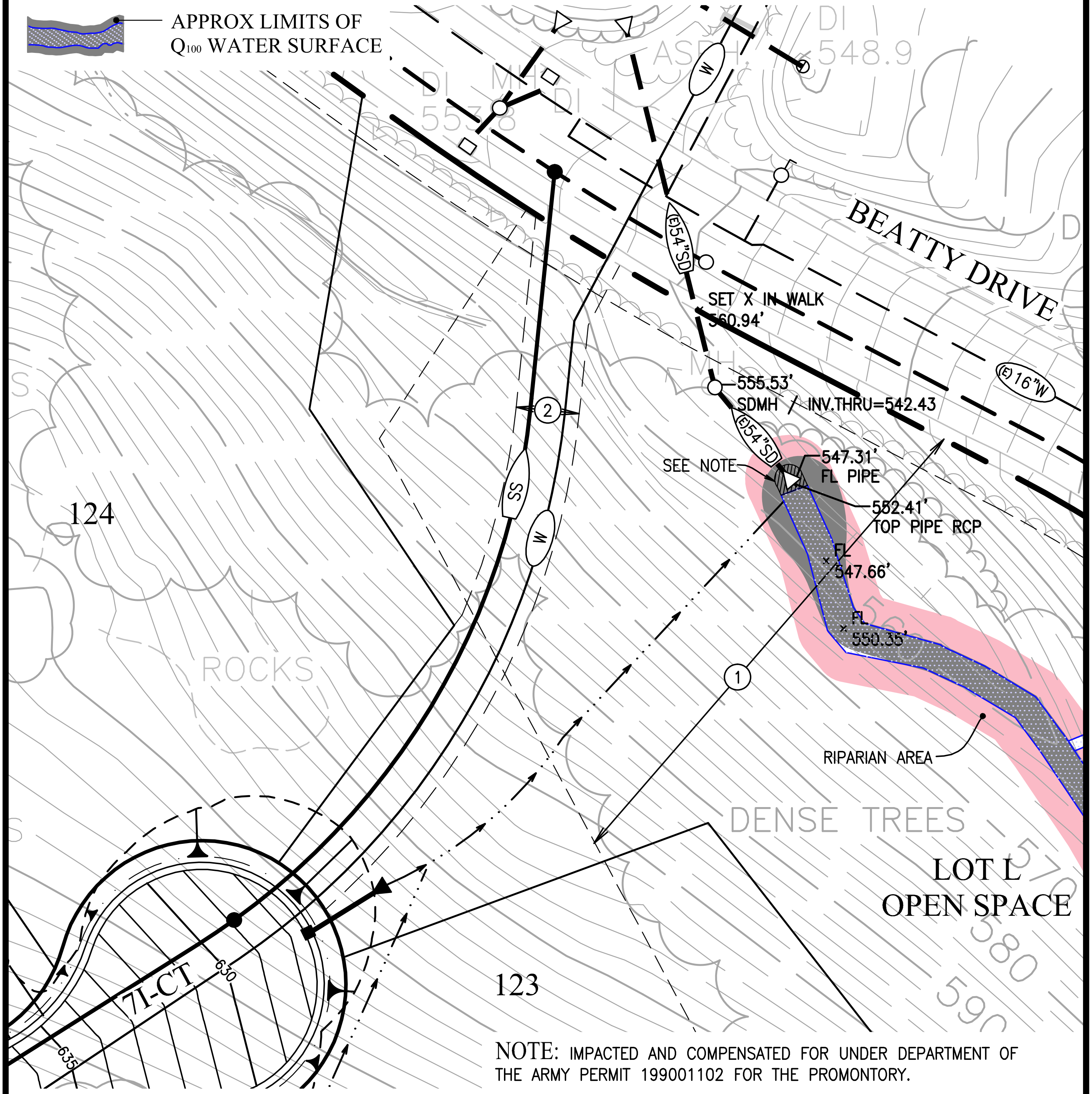
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

0 25' 50'
SCALE: 1" = 50'

DETAIL I - SHEET 9 OF 11

LEGEND

▨	W.O.U.S.
▨	APPROX LIMITS OF Q_{100} WATER SURFACE



NOTE: IMPACTED AND COMPENSATED FOR UNDER DEPARTMENT OF THE ARMY PERMIT 199001102 FOR THE PROMONTORY.

KEY NOTE:

① (E) OAK TREE MONITORING/MAINTENANCE EASEMENT
② PROPOSED EID EASMENT

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PROMONTORY VILLAGE 7

W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"

EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

LEGEND

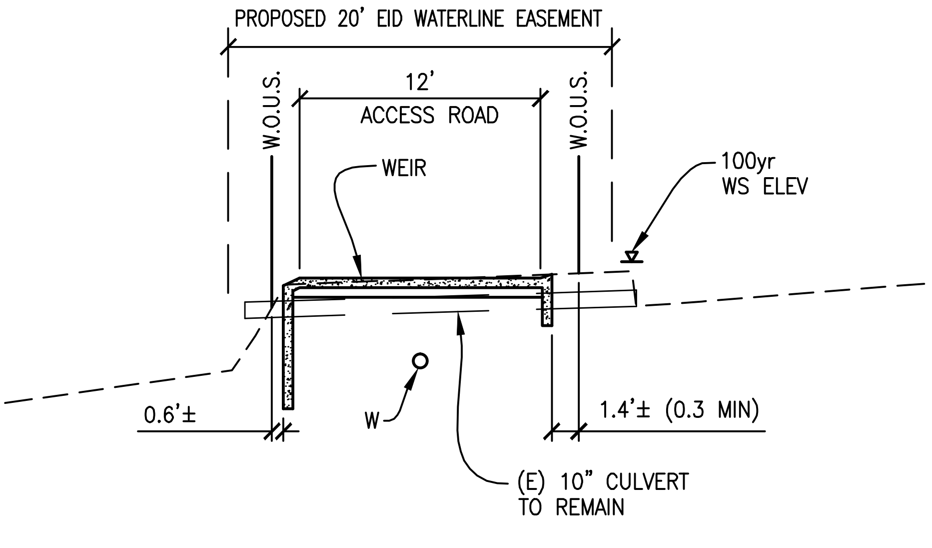
- 〰 W.O.U.S.
- ▨ APPROX LIMITS OF Q_{100} WATER SURFACE

SCALE: 1" = 50'

DETAIL J - SHEET 10 OF 11

POTENTIAL EID WATER LINE CROSSING - OPTION A

PLAN VIEW
SCALE: 1" = 50'



PROFILE
SCALE: 1" = 10'

KEY NOTE:

① PROPOSED 20' EID WATERLINE EASEMENT

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PROMONTORY VILLAGE 7
W.O.U.S. AVOIDANCE EXHIBITS - DETAILS "A" THRU "J"
EL DORADO COUNTY, CALIFORNIA
JUNE, 2016

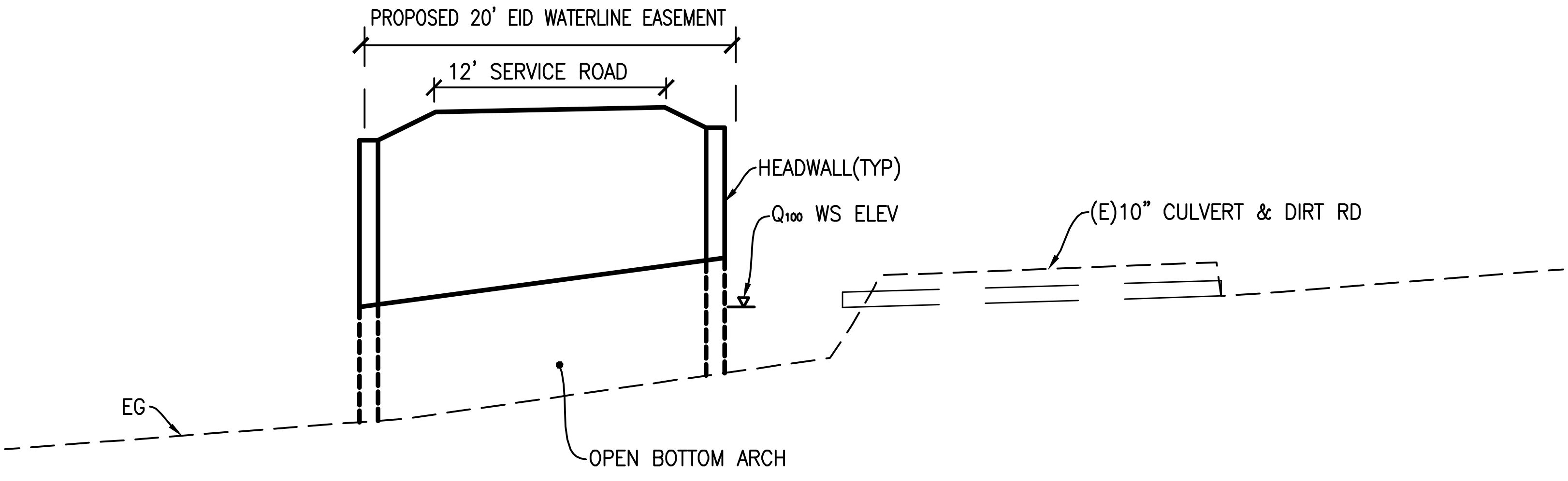
LEGEND

▨	W.O.U.S.
▨	APPROX LIMITS OF Q_{100} WATER SURFACE

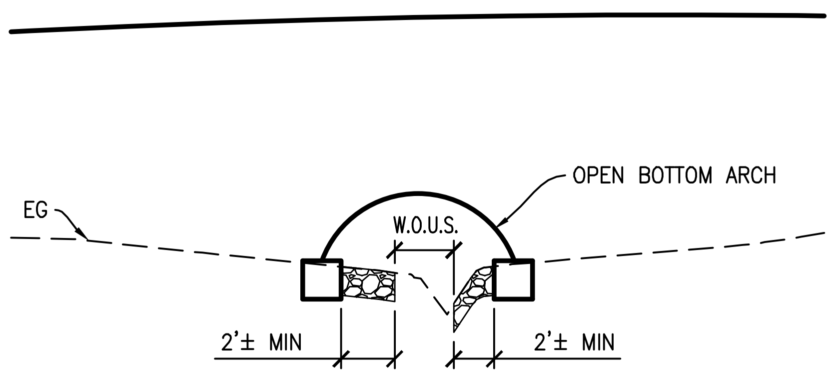
0 25' 50'
SCALE: 1" = 50'

DETAIL J - SHEET 11 OF 11
POTENTIAL EID WATER LINE CROSSING - OPTION B

PLAN VIEW
SCALE: 1" = 50'



PROFILE
SCALE: 1" = 10'



SECTION
SCALE: 1" = 10'

KEY NOTE:

① PROPOSED 20' EID WATERLINE EASEMENT

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Appendix B — Mitigation Monitoring and Reporting Program

THE PROMONTORY SPECIFIC PLAN

Mitigation Monitoring And Reporting Program

November 4, 1997

Prepared for
El Dorado County

Errata Sheet
The Promontory Specific Plan
Mitigation Monitoring and Reporting Program

The Promontory Specific Plan Final Environmental Impact Report (EIR) and the Mitigation Monitoring and Reporting Program (MMRP) were published on August 28, 1997. Based on further review of The Promontory Specific Plan Final EIR and final comments made at the November 4, 1997 El Dorado County Board of Supervisors Meeting, several minor modifications were made to the August 28, 1997 Final EIR and MMRP. This document includes these modifications and consists of The Promontory Specific Plan MMRP as adopted by the El Dorado County Board of Supervisors on November 4, 1997.

MITIGATION MONITORING AND REPORTING PROGRAM

THE PROMONTORY SPECIFIC PLAN - EL DORADO COUNTY

INTRODUCTION

The California Environmental Quality Act (CEQA), Section 21081.6(a)(1) of the Public Resources Code, requires public agencies, as part of the certification of an environmental impact report (EIR), to prepare and approve a reporting or monitoring program. This program should be structured to ensure that changes to the project that the lead agency has adopted to mitigate or avoid significant environmental impacts are carried out during project implementation.

The Mitigation Monitoring and Reporting Program (MMRP) contained herein is intended to satisfy the requirements of CEQA as they relate to the Promontory Specific Plan Environmental Impact Report (EIR). The MMRP is intended to be used by the El Dorado County (County) staff, participating agencies, project contractors, and mitigation monitoring personnel during implementation of the project.

The Promontory Specific Plan EIR presents a detailed and complex set of mitigation measures that will be implemented throughout the lifetime of the project. Mitigation is defined by CEQA as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action.
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project.
- Compensates for the impact by replacing or providing substitute resources or environments.

The intent of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMRP will provide for daily monitoring of construction activities as necessary, in-the-field identification and resolution of environmental concerns, and proper reporting to County staff.

RESPONSIBILITIES AND AUTHORITY

The El Dorado County Planning Department (Planning Department) will have primary responsibility for the operation and implementation of the MMRP. The Planning Department is responsible for the following activities:

- managing all technical advisors and coordinating monitoring activities;
- directing the preparation and filing of Compliance Reports; and
- maintaining records concerning the status of all mitigation measures.

The following text briefly outlines the key positions in the mitigation monitoring program team and their respective functions.

TABLE 1
MITIGATION MONITORING TEAM

Key Position	**Function**
Resource Management Coordinator	County staff planner assigned to receive and maintain files related to monitoring reports.
Director of Transportation	Responsible for recommending and monitoring various conditions of approval related to transportation and public works.
Legal Counsel	Responsible for recommending various conditions of approval. The legal counsel should be responsible for implementing corrective action and should have ultimate responsibility for changes in the field and final arbiter of disputes.
Technical Advisors to the County ▪ El Dorado County Air Pollution District (APCD) ▪ El Dorado Count Department of Transportation (DOT) ▪ El Dorado County Environmental Management Department (EMD) ▪ El Dorado County Transit Authority ▪ El Dorado Hills Community Services District (CSD) ▪ United States Fish and Wildlife Service (USFWS) ▪ United States Army Corps of Engineers (USACE) ▪ California Department of Fish and Game (CDFG) ▪ Central Valley Regional Water Quality Control Board (CVRWQCB) ▪ Native American Heritage Commission (NAHC) ▪ Northeast Information Center (NIC)	Experts in various fields that would be consulted by the Planning Department to assist in monitoring activities.

COMPLIANCE CHECKLIST

Table 2 contains a compliance checklist that provides a synopsis of all adopted mitigation measures, the entity responsible for their implementation, the entity responsible for monitoring, and the timing of implementation (i.e., pre-construction, construction, operation) identified in the EIR.

FIELD MONITORING OF MITIGATION MEASURE IMPLEMENTATION

During construction of phases within the Promontory Specific Plan, the County's construction inspector will be responsible for field monitoring of mitigation measure compliance. The inspector will report to the Planning Department and will be thoroughly familiar with the plans and requirements set forth in the permit conditions and the MMRP. In addition, the inspector will be familiar with construction contract requirements, construction schedules, standard construction practices, and mitigation techniques. In order to track the status of mitigation measure implementation, field monitoring activities will be documented on compliance monitoring report worksheets. The time commitment of the inspector will vary, depending on the intensity and location of construction. Aided by Table 2, the inspector will be responsible for the following activities.

- On-site, day-to-day monitoring of construction activities.
- Reviewing construction plans and equipment staging/access plans to ensure conformance with adopted mitigation measures.
- Ensuring contractor knowledge of and compliance with all appropriate permit conditions and the MMRP.
- Evaluating the adequacy of construction impact mitigation measures and proposing improvements to the contractors and Planning Department Staff.
- Having the authority to require correction of activities that violate project permit conditions or mitigation measures, or that represent unsafe or dangerous conditions. The inspector shall have the ability and authority to secure compliance with the conditions or standards through the Planning Department Director and/or County legal counsel, if necessary.
- Acting in the role of contact for property owners or any other affected persons who wish to register observations of violations of project permit conditions or mitigation measures, or unsafe or dangerous conditions. Upon receiving any complaints, the inspector shall be responsible for verifying any such observation and for developing any necessary corrective actions in consultation with the construction representative and the Planning Department.

- Maintaining prompt and regular communication with the Planning Department, other appropriate county agencies, or pertinent resource agencies (i.e., CDFG, USFWS, USACE).

- Obtaining assistance as necessary from technical experts, such as archeologists, botanists, and wildlife biologists, in order to develop site-specific procedures for implementing the mitigation measures. For example, it may be necessary at times for an archeologist to work in the field with the inspector and the construction contractor to explicitly identify and mark areas to be avoided during construction.

- Maintaining a log of all significant interactions, violations of permit conditions or mitigation measures, and necessary corrective measures.

In the event that disputes between the public and/or governmental agencies and the project contractors regarding adherence to permit conditions and mitigation measures are not resolved by the inspector, such disputes shall be referred to the Planning Development Director and/or County legal counsel for resolution.

TABLE 2
MITIGATION MONITORING PROGRAM

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
4.2	**LAND USE**				
4.2.1a	Prior to final approval of any project site improvement plans and the commencement of construction activities, the project applicant shall locate construction staging areas as far as feasibly possible from existing residential areas. Construction staging areas shall be identified on project site improvement plans and approved by the El Dorado County Department of Transportation.	The project applicant will be responsible for preparing project site improvement plans for El Dorado County Department of Transportation (DOT) review. Improvement plan requirements for staging areas will be monitored by DOT at plan review and during construction activities.	El Dorado County	Prior to and during construction.	
4.2.1b	During construction activities, the project applicant shall limit the amount of daily construction equipment traffic by staging construction equipment and vehicles on the project site at the end of each work day rather than removing them.	The project applicant will stage construction equipment and vehicles on the project site to the maximum extent feasible. Staging activities on the project site will be monitored by DOT.	El Dorado County	During construction.	
4.2.1c	Prior to any construction activities requiring complete or partial closure of existing roadways surrounding the project site, the project applicant shall perform the following tasks to the satisfaction of the El Dorado County Department of Transportation: • Provide written notice to property owners along affected roadways one week prior to roadway closures. • To ensure public safety, clearly mark and secure roadway construction areas. • Steel plates shall be placed over open trenches at the end of each work day to restore vehicle access to all residents. • Roadway closure shall not occur during the a.m. or p.m. peak-hour traffic periods.	The project applicant will be responsible for noticing property owners that would be affected by roadway closures as well as clearly marking and securing roadway construction areas to the satisfaction of DOT. The project applicant will provide proof of public noticing to DOT. DOT will monitor roadway construction activities.	El Dorado County	Prior to and during construction activities.	
4.3	**AESTHETICS**				
4.3.1a	Prior to County approval of project site grading plans, the following item shall be included in the grading plans: • Project site grading shall avoid disturbing and/or removing rock outcroppings and oak trees to the maximum extent feasible.	Upon submitting grading plans for project site development, the project applicant will identify oak trees and rock outcroppings which will be preserved and those which will be removed on the grading plans. DOT will review project grading for conformance with this mitigation measure as well as County standards.	El Dorado County	Prior to construction.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
4.3.1b	Landscaping plans for the project shall be developed and designed to preserve existing natural features, as feasible. The landscaping plans shall include the use of native species within the project site and along project roadways and frontages to blend with the natural features of the project site. Landscaping plans shall be in conformance with County and El Dorado Hills Community Services District standards.	The project applicant will submit landscaping plans for the project site for review by the El Dorado County and El Dorado Hills Community Services District to ensure compliance to this mitigation measure.	El Dorado County, El Dorado Hills Community Services District	Prior to the installation of project landscaping.	
4.3.1c	Project Design Guidelines shall include the following design standards that are identified within highly visible areas (see Figure 4.3-5): • All residential structures shall be restricted to earth tone colors and designed to blend with the natural features of the project site. Such earth tone colors may include, but are not limited to, dark ochers, browns, and grays. • Structures and facilities within the Neighborhood Park and Elementary School site shall be restricted to earth tone colors (e.g., dark ochers, browns, and grays) and designed to blend with the natural features of the project site. Landscaping for both sites shall consist of native plant species and will blend with the existing vegetation on the project site. • Proposed lift stations shall be architecturally designed to blend with the surrounding natural features and/or screened with native landscaping in a manner acceptable to the El Dorado Irrigation District.	The project applicant will submit plans and architectural renderings to the El Dorado Hills Community Services District (CSD) for design review. The CSD will be responsible for ensuring this mitigation measure is implemented. Architectural and screening standards for project lift stations will also be reviewed by the El Dorado Irrigation District.	El Dorado County, El Dorado Hills Community Services District, El Dorado Irrigation District	Prior to the issuance of building permits and infrastructure improvement plan approvals.	
4.3.1d	Streetscape features, such as street lights and project entry signage, shall be incorporated into the streetscape landscaping and blend with the natural features of the site.	The project applicant will submit plans to the (CSD) for design review. The CSD will be responsible for ensuring this mitigation measure is implemented.	El Dorado County, El Dorado Hills Community Services District	Prior to construction activities.	
4.3.1e	Project-wide solid fences and walls shall be avoided to the maximum extent feasible (except within individual residential building envelopes). If solid fences and walls are used, the color and material used will blend with the natural features of the project site. Continuous fences and walls shall be softened with landscaping.	The project applicant will submit plans to the (CSD) for design review. The CSD will be responsible for ensuring this mitigation measure is implemented.	El Dorado County, El Dorado Hills Community Services District	Prior to construction activities.	
4.3.1f	Project Design Guidelines shall include standards on the placement, height, and general visibility of outdoor antennas and satellite dishes throughout the project site.	The project applicant will submit project Design Guidelines, CC&Rs, and design notebooks to the CSD for approval. The CSD will be responsible for ensuring this mitigation measure is implemented.	El Dorado County, El Dorado Hills Community Services District	Prior to the issuance of building permits.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
4.3.3a	Prior to final water and sewer system approval, sewer and water improvement plans shall include details for screening sewer lift stations and the two million gallon water storage tank in a manner acceptable to the El Dorado Irrigation District. These screening details shall also be submitted to the El Dorado Hills Design Review Committee for review. Methods of screening may include, but are not limited to, the following: 1. Architectural design of facilities to blend with the surrounding natural features. 2. Screen facilities with native landscaping. 3. Place facilities partially or completely underground.	The project applicant will coordinate with the El Dorado Irrigation District (EID) on appropriate methods of screening water and sewer facilities on the project site. The project applicant will also submit these plans to the El Dorado Hills Design Review Committee for review.	El Dorado County, El Dorado Irrigation District, El Dorado Hills Design Review Committee	Prior to infrastructurei mprovement plans approval.	
4.3.3b	Implement mitigation measures 4.3.1b, 4.3.1d, and 4.3.1e.	See mitigation measures 4.3.1b, 4.3.1d, and 4.3.1e.	n/a	n/a	
4.3.5	Implement mitigation measures 4.3.1a through 4.3.1e and 4.3.3a.	See mitigation measures 4.3.1a through 4.3.1e and 4.3.3a.	n/a	n/a	
4.3.6	The use of polished or reflecting building materials shall be minimized on the project site. These materials would include, but are not limited to, reflective glass and polished metal exterior materials and facilities on buildings.	The project applicant will submit plans and architectural renderings to the El Dorado Hills Community Services District (CSD) for design review. The CSD will be responsible for ensuring this mitigation measure is implemented.	El Dorado County, El Dorado Hills Community Services District	Prior to the issuance of building permits.	
4.3.7a	Outdoor light fixtures for non-residential areas shall be low-intensity, shielded and/or directed away from residential areas, and only used where necessary for safety and security purposes.	Project site improvement plans will identify lighting fixtures to be used and will demonstrate compliance with this mitigation measure. El Dorado County will review improvement plans to ensure compliance.	El Dorado County	Prior to improvement plans approval.	
4.3.7b	Street light fixtures shall not exceed 30 feet in height and limited to the village center and major project roadway intersections.	Project site improvement plans will identify lighting fixtures to be used and will demonstrate compliance with this mitigation measure. El Dorado County will review improvement plans to ensure compliance.	El Dorado County	Prior to improvement plans approval.	
4.3.7c	Native landscaping, such as shrubs and trees, shall be planted in such a manner to shield motor vehicle lights and street lights from adjacent areas.	The project applicant will submit plans to the (CSD) for design review. The CSD will be responsible for ensuring this mitigation measure is implemented.	El Dorado County, El Dorado Hills Community Services District	Prior to construction activities.	
4.3.7d	Lighted park sports fields shall be restricted to the community park in the village center. Light fixtures for the neighborhood park shall be limited to that required for safety purposes.	Project site improvement plans will identify lighting fixtures to be used and will demonstrate compliance with this mitigation measure. El Dorado County will review improvement plans to ensure compliance.	El Dorado County	Prior to improvement plans approval.	

Mitigation Measure	Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
Phase 6: Development of the remaining portions of Village 7 and the Village Center with the construction of a portion of the Community Collector north of Village 7 and the Village Center Collector. Phase 7: Development of Village 4 with the construction of a portion of the Community Collector west of Village 4. Phase 8: Development of Village 8 with the construction of accesses to Weststar Lane and the City of Folsom. The above project and circulation phasing plan may be modified based on market and development constraints. However, no additional villages beyond Village 6 shall have access to existing residential roadways east of the project site (i.e., Suffolk Way, Gillett Drive, Powers Drive, Julie Ann Way, and Beatty Drive) until additional project accesses and roadways are developed.				
4.5.2a Widen Green Valley Road from two lanes to four lanes from El Dorado Hills Boulevard to the El Dorado County line.	Upon issuance of building permits, the project applicant will contribute its fair-share of RIF fees to El Dorado County or construct improvements to Green Valley Road in lieu of RIF fees.	El Dorado County	Prior to the issuance of building permits.	
4.5.3a Implement Mitigation Measure 4.5.2a.	See Mitigation Measure 4.5.2a.	n/a	n/a	
4.5.3b The project applicant shall be responsible for their fair-share cost of the following improvements: • widen the northbound Francisco Drive approach to include dual left-turn lanes, one exclusive through lane, and one exclusive right-turn lane; • widen the westbound Green Valley Road approach to include one exclusive left-turn lane, two exclusive through lanes, and one exclusive right-turn lane; • widen the eastbound Green Valley Road approach to include dual left-turn lanes, two exclusive through lanes, and one exclusive right-turn lane; and • modify the existing traffic signal equipment as necessary to accommodate the intersection widening.	Upon issuance of building permits, the project applicant will contribute its fair-share of RIF and TIM fees to El Dorado County or construct the identified improvements in lieu of payment of fees.	El Dorado County	Prior to the issuance of building permits.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
4.5.4	Install a traffic signal at the El Dorado Hills Boulevard/Francisco Drive intersection. Since signalization of the intersection is included in the El Dorado Hills RIF, the project will be subject to the RIF concurrently with the issuance of building permits.	Upon issuance of building permits, the project applicant will contribute its fair-share of RIF fees to El Dorado County or construct the identified improvements in lieu of payment of fees.	El Dorado County	Prior to the issuance of building permits.	
4.5.5	During the review of tentative maps for each phase of the Promontory Specific Plan, a traffic study shall be performed to determine the amount of project traffic that will be added to the El Dorado Hills Boulevard/Wilson Boulevard intersection. When the intersection warrants signalization, as determined by the El Dorado County Department of Transportation, or if the intersection is projected to operate at LOS "D", "E", or "F", as a result of implementing a particular phase of the Promontory Specific Plan, then the tentative map for that phase shall not be approved unless the intersection is signalized.	Upon issuance of building permits, the project applicant will contribute its fair-share of RIF fees to El Dorado County or construct the identified improvements in lieu of payment of fees.	El Dorado County	Prior to the issuance of building permits.	
4.5.6	Install a traffic signal at the Latrobe Road/U.S. Highway 50 Eastbound Ramps intersection. Since signalization of the intersection is included in the El Dorado Hills RIF, the project will be subject to the RIF concurrently with the issuance of building permits.	Upon issuance of building permits, the project applicant will contribute its fair-share of RIF fees to El Dorado County or construct the identified improvements in lieu of payment of fees.	El Dorado County	Prior to the issuance of building permits.	
4.5.7a	Implement Mitigation Measure 4.5.2a.	See Mitigation Measure 4.5.2a.	n/a	n/a	
4.5.7b	Install a traffic signal and turn lane improvements at the Green Valley Road/North-South Project Collector Road (Russell Ranch Boulevard Extension) intersection. The turn lane improvements shall include an exclusive westbound left-turn lane and an exclusive eastbound right-turn lane on Green Valley Road. In addition, the North-South Collector Road approach shall include a dual left-turn lane and an exclusive right-turn lane. The timing of these improvements will be predicated on the phasing of the project and the results of the traffic studies submitted with each tentative subdivision map.	The project applicant will install the traffic signal and turn lane improvements upon determination of need from traffic studies performed with each tentative subdivision map. DOT will review traffic studies for the project site and will determine the timing for the implementation of these improvements.	El Dorado County	As determined by traffic studies performed for the project site.	
4.5.8	The project applicant shall be responsible for contributing their fair-share of the cost to reconstruct the El Dorado Hills Boulevard/Latrobe Road interchange with U.S. Highway 50. Since reconstruction of the interchange is included in the El Dorado Hills RIF and the County's State System Capacity and Interchange Traffic Impact Mitigation program, the project will be subject to the RIF and State System Capacity TIM fee concurrently with the issuance of building permits.	Upon issuance of building permits, the project applicant will contribute its fair-share of RIF and TIM fees to El Dorado County.	El Dorado County	Prior to the issuance of building permits.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
	• All major surface streets are proposed to accommodate Class II bikeways and pedestrian sidewalks. These project proposed bicycle lanes in addition to the sidewalks shall be linked to the commercial center and local area network. Planned bikeways and sidewalks from the City of Folsom in the Russell Ranch Specific Plan shall be extended to connect to the proposed village center. Effectiveness of measure is estimated at a 0.1-2 percent reduction in total emissions (BAAQMD, 1996). • Prior to future final map approvals, the project applicant shall demonstrate that only EPA certified wood stoves and fireplaces inserts are installed in homes. Standard masonry fireplaces, uncertifiable by the EPA, shall not be constructed. EPA certified stoves and fireplace inserts have a 70 to 90 percent lower particulate emission rate than conventional stoves and fireplaces.				
4.6.6	Implement Mitigation Measure 4.6.5.	See Mitigation Measure 4.6.5.	n/a	n/a	
4.6.8	As a part of the improvement plans review and approval process, the County shall require project applicants to consult with the El Dorado County Air Pollution Control District and the El Dorado County Irrigation District (EID) regarding sewage pump/lift station odor control technologies. In the event that odor impacts occur, odor control measures shall be required by the County, District, and EID.	The project applicant will coordinate with the APCD and EID regarding odor control technologies for project site pump stations.	El Dorado County, El Dorado County Air Pollution Control District, El Dorado Irrigation District	Prior to approval of improvement plans for the wastewater conveyance system.	
4.6.9	Implement mitigation measures 4.6.1, 4.6.2a, 4.6.2b, 4.6.3, 4.6.4, and 4.6.5.	See mitigation measures 4.6.1, 4.6.2a, 4.6.2b, 4.6.3, 4.6.4, and 4.6.5.	n/a	n/a	
4.7	**NOISE**				
4.7.1a	Construction activities shall be limited to the hours of 7:00 a.m. to 6 p.m. on weekdays and the hours of 8:00 a.m. to 5 p.m. on Saturday and Sunday.	The project applicant will restrict construction activities to the times identified in this mitigation measure. The County construction inspector will monitor compliance with this measure.	El Dorado County	On-going.	
4.7.1b	Locate fixed construction equipment such as compressors and generators as far as feasibly possible from sensitive receptors. Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power construction equipment.	The project applicant will locate construction equipment as far as feasibly away from residential areas. The County construction inspector will monitor compliance with this measure.	El Dorado County	On-going.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
4.7.3	The County shall require: ▪ that speeds along Russell Ranch Boulevard in the area of Shadowfax and Amys Lane be posted at no higher than 30 mph (assumes posted speed limit exceedance by 5 mph and subsequently assures compliance with mitigation); and ▪ that a 4-foot earthen berm be constructed adjacent the west side of Russell Ranch Boulevard blocking line of site between Residence #1 through #3 and Russell Ranch Boulevard.	Roadway improvement plans for Russell Ranch Boulevard developed by the project applicant will include the design features identified in this mitigation measure. DOT will review the roadway improvement plans for consistency this measure.	El Dorado County	Prior to construction of Russell Ranch Boulevard between the Community Collector and Green Valley Road.	
4.7.4	Implement Mitigation Measure 4.5.1a.	See Mitigation Measure 4.5.1a.	n/a	n/a	
4.7.5	Prior to County approval of tentative subdivision maps, project applicants shall demonstrate compliance with the transportational noise compatibility requirements outlined in the El Dorado County General Plan Noise Element. Applicants shall demonstrate compliance through noise modeling and/or noise monitoring using approved methods and equipment. Future mitigation measures shall use Best Available Control Technology (BACT), with the use of noise barriers as a last feasible means of mitigation. Housing setbacks are the preferred mitigation method.	The project applicant will submit a noise study with each tentative subdivision map identifying anticipated noise levels, compatibility with El Dorado County General Plan standards, and mitigation to ensure General Plan consistency. The County will review the noise study prior to tentative map approval.	El Dorado County	Prior to tentative map approval.	
4.8	**BIOLOGICAL RESOURCES**				
4.8.1	Mitigation for project impacts to trees shall include measures for tree protection, revegetation and compensation, and monitoring. All aspects of the following measures must be implemented to ensure mitigation/compensation for the impact. ▪ The project applicant shall develop and implement a Tree Protection Plan to minimize direct and indirect impacts to oak woodland on the project site during construction and operation phases of the proposed project. The Plan shall require the use of buffers to prevent or reduce the effects of disruption in the hydrologic or edaphic (growing) environment of heritage trees. Canopy cover retention within oak woodlands shall meet the requirements of General Plan Policy 7.4.4.4. The elements of the Tree Protection Plan shall appear as standards in the tentative subdivision maps, improvement plans, and subdivision CC&Rs. The Plan shall be implemented prior to and during ground clearing, grading, or other construction activities that may impact oak trees. Unless stated otherwise, all measures shall be the sole responsibility of the project applicant. ▪ The County or project applicant (with County approval) shall engage a qualified project biologist or equivalent professional to oversee all aspects of construction monitoring that pertain to oak tree protection. The County would be responsible for reviewing the monitoring program. The project	The project applicant will submit the tree mitigation plan (as described in the mitigation measure) as part of the tentative and final map review and approval process. Implementation of the tree mitigation plan will occur throughout project site development. The County will review the tree mitigation plan for consistency with this mitigation measure prior to tentative and final map approvals, and the County will consult with the project biologist routinely.	El Dorado County	Prior to the first tentative subdivision map approval.	

Mitigation Measure	Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
applicant shall be responsible for reimbursing the County for all costs related to the compliance monitoring of the project. ▪ The project biologist shall be responsible for contractor education and shall monitor all construction activities in areas supporting sensitive biological resources. The project biologist shall be responsible for scheduling and/or implementing pre-construction tree surveys, and shall inform the County, the project engineer and the project general contractor if there are construction activities that threaten protected oak trees for which no mitigation measures have been identified in this EIR. ▪ The project biologist shall clearly mark on project maps all oak trees and oak woodlands to be avoided and provide these maps to the contractor. These areas shall be designated as "no construction" or "limited construction" zones. These areas shall be flagged by the project biologist prior to construction activities. In some cases, trees may need to be fenced or otherwise protected from direct or indirect impacts, as determined by the project biologist. ▪ The Tree Revegetation Plan shall consist of an implementation and a monitoring component. Because the exact extent of tree loss can only be determined after final grading plans and building envelopes are defined, a detailed analysis of 1) the precise number and species of trees to be removed, and 2) the specific mitigation areas to be planted, shall be developed and identified as part of the tentative and final map processes, in compliance with General Plan Policy 7.4.5.1. Lost tree canopy cover must be replaced at the percentage required under Policy 7.4.4.4 of the County General Plan. ▪ The Monitoring and Management Plan shall identify monitoring and management techniques for a recommended time period (as determined during development of the Plan) following implementation. The plan shall establish success criteria (performance standards) and shall describe steps to be taken to replace vegetation not meeting the success criteria (contingency plans). Performance standards could relate to the number of trees, species and sizes of trees, area of canopy, or a combination. Appropriate data sampling and statistical treatment of data shall be developed and utilized. ▪ A preliminary mitigation plan (based on the elements presented in this EIR) shall be submitted for review prior to approval of subsequent tentative subdivision maps. A draft mitigation plan (including draft versions of the Tree Protection Plan, Revegetation Plan, and Monitoring and Management Plan) shall be submitted with the applications for tentative subdivision maps and other subsequent approvals. The final mitigation plan shall be submitted as part of the final subdivision map process or prior to approval of a grading permit for improvement plans,				

Mitigation Measure	Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
• No construction equipment or vehicles will disturb natural drainageways without temporary or permanent culverts in place. Construction equipment and vehicle staging areas will be placed on disturbed areas and will be identified on project grading plans. • If construction activities are conducted during the winter or spring months, storm runoff will be regulated by temporary on-site detention basins. • Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) will be employed for disturbed slopes until permanent revegetation is established. • No disturbed surfaces will be left without erosion control measures during the winter and spring months. • Sediment will be retained on-site by a system of sediment basins, traps, or other appropriate measures. • Immediately after the completion of grading activities, erosion protection will be provided for finished slopes. This may include revegetation with native plants (deep-rooted species for steep slopes), mulching, hydroseeding, or other appropriate methods. • Energy dissipaters will be employed where drainage outlets discharge into areas of erodible soils or natural drainageways. Temporary dissipaters may be used for temporary storm runoff outlets during the construction phase. • A spill prevention an countermeasure plan will be developed identifying proper storage, collection, and disposal measures for pollutants used on-site. No-fueling zones shall be indicated on grading plans and shall be situated at least 100 feet from natural drainageways. *Operation Measures* • All storm drain inlets will be equipped with silt and grease traps to remove oil, debris, and other pollutants, which will be routinely cleaned and maintained. Storm drain inlets will also be labeled "No Dumping - Drains to Streams and Lakes". • Parking lots will be designed to allow as much runoff as feasible to be directed toward vegetative filter strips to help control sediment and improve water quality. • Storm runoff from service stations or other similar uses will be treated with an oil/water separator. • Permanent energy dissipaters will be included for permanent outlets.				

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
	• The detention/retention basin system on the site will be designed to provide effective water quality control measures. Design and operation features of detention/retention basins will include: 1. Construct basins with a total storage volume that permits adequate detention time for settling of fine particles even during high flow conditions. 2. Maximize the distance between basin inlets and outlets to reduce velocities, perhaps by using an elongate basin shape. 3. Incorporate some below grade area within the main detention basin for sediment settling. 4. Allow vegetation to reduce velocities and naturally filter water by encouraging vegetation establishment and ensuring adequate water supply to maintain vegetation cover. 5. Establish basin maintenance responsibility and schedules to periodically remove basin sedimentation, excessive vegetation growth, and debris that may clog basin inlets and outlets.				
4.10.2	Implement Mitigation Measure 4.10.1 (operation measures).	See Mitigation Measure 4.10.1.	n/a	n/a	
4.10.4	Prior to improvement plan approval for the Village Center and/or Villages 1, 2, 3, 5, and/or 7, the project applicant, in coordination with the El Dorado County Office of Emergency Services and the U.S. Bureau of Reclamation, will develop an evacuation plan for the project site. The evacuation plan will include the establishment of protocol in the event of the failure of Mormon Island Dam and will be consistent with the El Dorado County Operation Area Multi-Hazard Functional Emergency Operations Plan.	As identified in this mitigation measure, the project applicant will prepare and submit an evacuation plan for the project site. The project applicant will consult with the El Dorado County Office of Emergency Services and the U.S. Bureau of Reclamation.	El Dorado County, U.S. Bureau of Reclamation	Prior to approval of improvement plans for the Village Center and Villages 1, 2, 3, 5, and/or 7.	
4.10.5a	Prior to the first tentative map approval, El Dorado County shall coordinate with the City of Folsom and the City of Folsom/ El Dorado County Joint Powers Authority (JPA) in developing a formal drainage agreement identifying shared drainage facilities and volumes, pre- and post-development runoff volumes that maintain existing 100-year storm drainage flows, and a review process of future project-specific drainage plans. The JPA was formed to address development-related issues along the County line that affect both the City of Folsom and El Dorado County. Since a portion of the Promontory and neighboring developments in El Dorado County are at the headwaters to the Willow and Humbug Creeks in the City of Folsom, the JPA has the authority to coordinate the design of drainage facilities to ensure facilities are property planned. The drainage agreement shall be approved by both the City of Folsom and El Dorado County.	El Dorado County, City of Folsom, JPA, and the project applicant will prepare a formal drainage agreement to address increased drainage flows into the City of Folsom.	El Dorado County, City of Folsom City of Folsom/El Dorado County Joint Powers Authority	Prior to the approval of the first improvement plans.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
4.10.5b	Prior to approval of improvement plans for site development, the project applicant shall prepare a hydrologic study in conformance with the El Dorado County Drainage Manual which would support the project drainage plans. The project applicant shall submit both the hydrologic study and drainage plans to the County for review and approval. The drainage plans shall clearly demonstrate that build-out peak storm runoff flows from the project site will remain at or below existing peak storm runoff flows. The drainage plan will provide details on ultimate location and design of retention/detention basins and other drainage facilities, as well as a maintenance program for all drainage facilities. The drainage plan shall also identify the 100-year floodplain on the project site, or verify that no 100-year flood zones will exist on the site. The drainage plan shall be in conformance with the El Dorado County Drainage Manual, as well as any additional requirements set forth the City of Folsom/El Dorado County drainage agreement described in Mitigation Measure 4.10.5a.	The project applicant will submit detailed drainage studies for the project site. DOT will review the drainage studies for compliance to this mitigation measure prior to approval of improvement plans.	El Dorado County	Prior to improvement plans approval.	
4.10.5c	If the drainage plan described in Mitigation Measure 4.10.5b identifies 100-year flood plain on the project site, project development shall not occur in those areas identified, unless flood protection improvements approved by the County are implemented.	As identified in this mitigation measure, the project applicant will avoid placing structures in the 100-year floodplain. If structures are placed within the floodplain, they will be approved by DOT. DOT will review all development plans for areas adjacent to the 100-year floodplain.	El Dorado County	On-going.	
4.10.6	Implement the procedures outlined in Mitigation Measure 4.10.5b, specifically with regards to the northern drainageway.	See Mitigation Measure 4.10.5b.	n/a	n/a	
4.11	**CULTURAL RESOURCES**				
4.11.2	The project applicant shall implement the following measures to minimize potential impacts to undiscovered cultural resources: A. Prior to the approval of subsequent tentative subdivision maps for project development, the project applicant shall retain a qualified archaeologists to perform an archaeological survey for the tentative subdivision map area. The archaeological survey shall employ current field survey and record search methods and standards. Significant archaeological resources discovered shall be recorded and avoided and/or mitigated, pursuant to state and federal standards. The findings of the archaeological survey shall summarized in a report and submitted to the County prior to tentative subdivision map approval. B. In the event that any prehistoric or historic subsurface cultural resources are discovered during construction-related earthmoving activities, all work within 20 meters of the resources shall be halted and the project applicant shall consult with a qualified archaeologist to assess the significance of the find. If any find were determined to be significant by the qualified archaeologist, then representatives of the project applicant,	The project applicant will retain a cultural resource specialist to perform archaeological surveys of the project site. The County will review these surveys prior to each tentative map approval. In addition, the project applicant will contact the County immediately upon discovering cultural resources during construction activities.	El Dorado County	Prior to tentative map approvals and during construction activities.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
	El Dorado County, and the qualified archaeologist would meet to determine the appropriate course of action. If the discovery includes human remains, Section VIII of CEQA Guidelines Appendix K would be followed, requiring coordination with the Native American Heritage Commission if the human remains are of Native American origin. All significant cultural materials recovered would be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.				
4.11.3	If the County establishes a program to provide fencing or other physical barriers around existing cemeteries to prohibit unlawful entry, the project applicant would contribute a pro-rata share to construct a fence or physical barrier around the existing Mormon Island Relocated Cemetery.	The project applicant will participate in any program established by the County to protect the Mormon Island Relocated Cemetery.	El Dorado County	Upon development of a cemetery protection program for Mormon Island Relocated Cemetery.	
4.12	PUBLIC SERVICES				
4.12.3a	Prior to approval of tentative subdivision maps and improvement plans, the project applicant shall submit project design plans to the El Dorado Hills Fire Department for review and approval to ensure that project site design meets Department standards. This would include, but is not limited to, providing at least two permanent access roads into the project site throughout project development. In addition, all project gates shall be designed to Department standards unless approved otherwise by the Department. All project roadways and access points shall be designed according to El Dorado Hills Fire Department and El Dorado County Department of Transportation standards to ensure adequate emergency access in accordance with General Plan Policies 5.7.1.1, 5.7.4.1, 6.2.3.1, and 6.2.3.2.	The project applicant will submit tentative subdivision maps and improvement plans to the El Dorado Hills Fire Department and DOT for review and approval of project design. The Department and DOT will review project plans for conformance to this mitigation measure and County standards prior to tentative map and/or improvement plan approval.	El Dorado County, El Dorado Hills Fire Department	Prior to tentative map approvals.	
4.12.3b	Prior to subsequent tentative map approval for Villages 4 through 8, the project applicant shall prepare and submit a fuel modification plan to the El Dorado Hills Fire Department for review and approval. This plan shall include measures to reduce natural fire hazards, such as removal of overgrown vegetation near homes, and shall conform to Department and State standards.	As identified in the mitigation measure, the project applicant will develop and submit a fuel modification plan to the El Dorado Hills Fire Department for approval. Tentative maps for Villages 4 through 8 will not be approved until the Department has reviewed and approved the plan.	El Dorado County, El Dorado Hills Fire Department	Prior to tentative map and/or improvement plan approvals for Villages 4 through 8.	
4.12.5	Prior to approval of the Specific Plan, the project applicant shall execute the "Agreement to Fund School Facilities to Mitigate Impacts From New Development" to provide for the payment of fees in the amount of $8,288.00 per unit, increased annually by the construction cost index, to fund new school facilities. The School Districts shall have approved this agreement prior to approval of the first tentative map. Prior to approval of the first tentative map, the project applicant shall have negotiated and executed an agreement with the Rescue Union School District for the acquisition of a K-6	The project applicant will enter into the fee agreement prior to Specific Plan approval and remaining agreements prior to the approval of the first tentative map. The County will verify that the agreements have been executed, prior to Specific Plan approval and first tentative map approval.	El Dorado County, Rescue Union School District, Buckeye Union School District, El Dorado Union High School District	Prior to Specific Plan approval for the fee agreement and prior to first tentative map approval.	

Mitigation Measure		Implementation and Monitoring Action	Monitoring Responsibility	Timing	Mitigation Completed
	school site to serve the project and for the construction of the school facilities. Prior to approval of the first tentative map, the project applicant shall have negotiated and executed an agreement with the El Dorado Union High School District for an option to acquire a new high school site to serve the El Dorado Hills area.				
4.13	**UTILITIES AND SERVICE SYSTEMS**				
4.13.1a	In accordance with EID Policy Statement No. 22, the project applicant shall prepare a Facility Plan Report (FPR) for the proposed project. The FPR shall address the expansion of the water and sewer facilities and the specific fire flow requirements for all phases of the project.	The project applicant will prepare a FPR as part of the development of improvement plans for the project site. The FPR will be reviewed and approved by EID prior to providing water service.	El Dorado County, El Dorado Irrigation District	Prior to each tentative map approval.	
4.13.1b	In accordance with General Plan Objective 4.5.1, water-efficient housing features, such as low-volume and low-flow plumbing fixtures, shall be installed to reduce water consumption.	The project applicant will include water-efficient housing features in the design of residential dwelling units on the project site. The El Dorado County Building Department will review building plans for conformance to this mitigation measure.	El Dorado County	Prior to the issuance of building permits.	
4.13.1c	Efficient irrigation systems shall be installed in common landscaped areas to minimize runoff and evaporation and maximize the water that will reach plant roots. One or any combination of the following methods of increasing irrigation efficiency shall be employed: drip irrigation, soil moisture sensors, and automatic irrigation systems. Mulch shall be used extensively in all common landscaped areas. Drought resistant and native vegetation shall be used in common landscape areas.	Project site landscaping plans will identify water-efficient irrigation systems, consistent with this mitigation measure. The County and the CSD will review landscaping plans for conformance to this mitigation measure.	El Dorado County, El Dorado Hills Community Services District	Prior to the approval of landscaping plans.	

Appendix C — CDFW, CNPS, and USFWS Queries

CDFW CNDDB: Clarksville, Rocklin, Pilot Hill, Coloma, Shingle Springs, Latrobe, Buffalo Creek, Folsom SE, and Folsom Quadrangles

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:
Quad IS (Buffalo Creek (3812152) OR Clarksville (3812161) OR Coloma (3812078) OR Folsom (3812162) OR Folsom SE (3812151) OR Latrobe (3812058) OR Pilot Hill (3812171) OR Rocklin (3812172) OR Shingle Springs (3812068))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	104	2	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Cismontane woodland, Riparian forest, Riparian woodland, Upper montane coniferous forest
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	781	21	None	None	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Allium jepsonii	Jepson's onion	Monocots	PMLIL022V0	27	2	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Ammodramus savannarum	grasshopper sparrow	Birds	ABPBXA0020	19	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Valley & foothill grassland
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	Insects	IIHYM35030	15	1	None	None	G2	S2	null	null	Vernal pool
Antrozous pallidus	pallid bat	Mammals	AMACC10010	403	1	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive,	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland

											WBWG_H-High Priority	
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	312	2	None	None	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest, Cismontane woodland, Coastal prairie, Great Basin grassland, Great Basin scrub, Lower montane coniferous forest, Pinon & juniper woodlands, Upper montane coniferous forest, Valley & foothill grassland
Ardea alba	great egret	Birds	ABNGA04040	35	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	137	5	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1887	8	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Balsamorhiza macrolepis	big-scale balsamroot	Dicots	PDAST11061	43	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Banksula californica	Alabaster Cave harvestman	Arachnids	ILARA14020	1	1	None	None	GH	SH	null	null	Limestone
Bombus occidentalis	western bumble bee	Insects	IIHYM24250	282	1	None	None	G2G3	S1	null	USFS_S-Sensitive, XERCES_IM-Imperiled	null
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	750	20	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta mesovallensis	midvalley fairy shrimp	Crustaceans	ICBRA03150	126	2	None	None	G2	S2S3	null	null	Vernal pool, Wetland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2401	8	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland

											Conservation Concern	
Calystegia stebbinsii	Stebbins' morning-glory	Dicots	PDCON040H0	13	8	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Ultramafic
Ceanothus roderickii	Pine Hill ceanothus	Dicots	PDRHA04190	8	8	Endangered	Rare	G1	S1	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Ultramafic
Central Valley Drainage Hardhead/Squawfish Stream	Central Valley Drainage Hardhead/Squawfish Stream	Inland Waters	CARA2443CA	11	1	None	None	GNR	SNR	null	null	null
Chlorogalum grandiflorum	Red Hills soaproot	Monocots	PMLIL0G020	82	11	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Dicots	PDONA05053	89	16	None	None	G4G5T4	S4	4.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest
Cosumnoperla hypocrena	Cosumnes stripetail	Insects	IIPLE23020	12	4	None	None	G2	S2	null	null	Aquatic
Crocanthemum suffrutescens	Bisbee Peak rush-rose	Dicots	PDCIS020F0	31	16	None	None	G2Q	S2	3.2	null	Chaparral, Ione formation, Ultramafic
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	20	Threatened	None	G3T2	S2	null	null	Riparian scrub
Downingia pusilla	dwarf downingia	Dicots	PDCAM060C0	126	1	None	None	GU	S2	2B.2	null	Valley & foothill grassland, Vernal pool, Wetland
Dumontia oregonensis	hairy water flea	Crustaceans	ICBRA23010	2	1	None	None	G1G3	S1	null	null	Vernal pool
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	162	10	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1159	11	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Eryngium pinnatisectum	Tuolumne button-celery	Dicots	PDAPI0Z0P0	24	1	None	None	G2	S2	1B.2	null	Cismontane woodland, Lower montane coniferous forest, Vernal pool, Wetland
Falco columbarius	merlin	Birds	ABNKD06030	34	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Estuary, Great Basin grassland, Valley & foothill grassland
Fremontodendron decumbens	Pine Hill flannelbush	Dicots	PDSTE03030	10	7	Endangered	Rare	G1	S1	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_UCBBG-	Chaparral, Cismontane woodland, Ultramafic

											UC Berkeley Botanical Garden	
Galium californicum ssp. sierrae	El Dorado bedstraw	Dicots	PDRUB0N0E7	16	16	Endangered	Rare	G5T1	S1	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Gratiola heterosepala	Boggs Lake hedge-hyssop	Dicots	PDSCR0R060	94	5	None	Endangered	G2	S2	1B.2	BLM_S-Sensitive	Freshwater marsh, Marsh & swamp, Vernal pool, Wetland
Haliaeetus leucocephalus	bald eagle	Birds	ABNKC10010	321	4	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Lower montane coniferous forest, Oldgrowth
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	Insects	IICOL5V010	13	2	None	None	G2?	S2?	null	null	Aquatic, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Monocots	PMJUN011L1	13	1	None	None	G2T1	S1	1B.2	null	Valley & foothill grassland
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	138	2	None	None	G5	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	241	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Legenere limosa	legenere	Dicots	PDCAM0C010	78	7	None	None	G2	S2	1B.1	BLM_S-Sensitive	Vernal pool, Wetland
Lepidurus packardi	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	317	28	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	426	16	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
Navarretia myersii ssp. myersii	pincushion navarretia	Dicots	PDPLM0C0X1	14	1	None	None	G2T2	S2	1B.1	null	Vernal pool, Wetland

Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	10	None	None	G3	S3.1	null	null	Vernal pool, Wetland
Northern Volcanic Mud Flow Vernal Pool	Northern Volcanic Mud Flow Vernal Pool	Herbaceous	CTT44132CA	7	3	None	None	G1	S1.1	null	null	Vernal pool, Wetland
Oncorhynchus mykiss irideus	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	3	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Orcuttia tenuis	slender Orcutt grass	Monocots	PMPOA4G050	97	1	Threatened	Endangered	G2	S2	1B.1	SB_UCBBG-UC Berkeley Botanical Garden	Vernal pool, Wetland
Orcuttia viscida	Sacramento Orcutt grass	Monocots	PMPOA4G070	12	10	Endangered	Endangered	G1	S1	1B.1	null	Vernal pool, Wetland
Packera layneae	Layne's ragwort	Dicots	PDAST8H1V0	48	31	Threatened	Rare	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Ultramafic
Pandion haliaetus	osprey	Birds	ABNKC01010	483	1	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Pekania pennanti	fisher - West Coast DPS	Mammals	AMAJF01021	725	1	Proposed Threatened	Candidate Threatened	G5T2T3Q	S2S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive	North coast coniferous forest, Oldgrowth, Riparian forest
Phalacrocorax auritus	double-crested cormorant	Birds	ABNFD01020	37	1	None	None	G5	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	731	4	None	None	G3G4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon & juniper woodlands, Riparian scrub, Riparian woodland, Valley & foothill grassland
Progne subis	purple martin	Birds	ABPAU01010	68	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, Lower montane coniferous forest
Rana boylii	foothill yellow-legged frog	Amphibians	AAABH01050	874	1	None	None	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters

											Threatened, USFS_S-Sensitive	
Rana draytonii	California red-legged frog	Amphibians	AAABH01022	1385	1	Threatened	None	G2G3	S2S3	null	CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh & swamp, Riparian forest, Riparian scrub, Riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Riparia riparia	bank swallow	Birds	ABPAU08010	296	1	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	93	2	None	None	G3	S3	1B.2	BLM_S-Sensitive	Marsh & swamp, Wetland
Spea hammondii	western spadefoot	Amphibians	AAABF02020	429	2	None	None	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	493	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis gigas	giant gartersnake	Reptiles	ARADB36150	346	1	Threatened	Threatened	G2	S2	null	IUCN_VU-Vulnerable	Marsh & swamp, Riparian scrub, Wetland
Valley Needlegrass Grassland	Valley Needlegrass Grassland	Herbaceous	CTT42110CA	45	1	None	None	G3	S3.1	null	null	Valley & foothill grassland
Wyethia reticulata	El Dorado County mule ears	Dicots	PDAST9X0D0	25	25	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic

CNPS Inventory of Rare and Endangered: Clarksville, Rocklin, Pilot Hill, Coloma, Shingle Springs, Latrobe, Buffalo Creek, Folsom SE, and Folsom Quadrangles

CNPS California Native Plant Society

Rare and Endangered Plant Inventory

Plant List

30 matches found. Click on scientific name for details

Search Criteria

Found in 9 Quads around 38121F1

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Allium jepsonii	Jepson's onion	Alliaceae	perennial bulbiferous herb	1B.2	S2	G2
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	4.2	S4?	G3T4?
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S4	G4
Calystegia stebbinsii	Stebbins' morning-glory	Convolvulaceae	perennial rhizomatous herb	1B.1	S1	G1
Carex xerophila	chaparral sedge	Cyperaceae	perennial herb	1B.2	S2S3	G2G3
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	4.3	S4	G4
Ceanothus roderickii	Pine Hill ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	S1	G1
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	1B.2	S2	G2
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	4.2	S4	G4G5T4
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	annual herb	4.2	S3	G5T3
Crocanthemum suffrutescens	Bisbee Peak rush-rose	Cistaceae	perennial evergreen shrub	3.2	S2	G2Q
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2B.2	S2	GU
Erigeron miser	starved daisy	Asteraceae	perennial herb	1B.3	S3?	G3?
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	4.3	S3	G3
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	annual / perennial herb	1B.2	S2	G2
Fremontodendron decumbens	Pine Hill flannelbush	Malvaceae	perennial evergreen shrub	1B.2	S1	G1
Galium californicum ssp. sierrae	El Dorado bedstraw	Rubiaceae	perennial herb	1B.2	S1	G5T1
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	S2	G2
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	1B.2	S2	G2
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	1B.2	S1	G2T1
Legenere limosa	legenere	Campanulaceae	annual herb	1B.1	S2	G2

Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	perennial bulbiferous herb	4.2	S3	G4T3
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	1B.1	S2	G2T2
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	1B.1	S2	G2
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	1B.1	S1	G1
Packera layneae	Layne's ragwort	Asteraceae	perennial herb	1B.2	S2	G2
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb	1B.2	S3	G3
Trichostema rubisepalum	Hernandez bluecurls	Lamiaceae	annual herb	4.3	S4	G4
Wyethia reticulata	El Dorado County mule ears	Asteraceae	perennial herb	1B.2	S2	G2

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USFWS List for Planning and Conservation (IPaC) Trust Resource Report: Promontory Village 7 Project, El Dorado County

IPaC

U.S. Fish & Wildlife Service

My project El Dorado County, California

This project potentially impacts **36 resources** managed or regulated by the U.S. Fish & Wildlife Service.

Endangered species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Amphibians

California Red-legged Frog Rana draytonii

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

California Tiger Salamander Ambystoma californiense

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Crustaceans

Vernal Pool Fairy Shrimp Branchinecta lynchi

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Vernal Pool Tadpole Shrimp Lepidurus packardi

Endangered (A species in danger of extinction throughout all or a significant portion of its range)

Fishes

Delta Smelt Hypomesus transpacificus

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Steelhead Oncorhynchus (=Salmo) mykiss

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Flowering Plants

El Dorado Bedstraw Galium californicum ssp. sierrae

Endangered (A species in danger of extinction throughout all or a significant portion of its range)

Layne's Butterweed Senecio layneae

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Pine Hill Ceanothus Ceanothus roderickii

Endangered (A species in danger of extinction throughout all or a significant portion of its range)

Pine Hill Flannelbush Fremontodendron californicum ssp. decumbens

Endangered (A species in danger of extinction throughout all or a significant portion of its range)

Stebbins' Morning-glory Calystegia stebbinsii

Endangered (A species in danger of extinction throughout all or a significant portion of its range)

Insects

Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Reptiles

Giant Garter Snake Thamnophis gigas

Threatened (A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range)

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS IN THIS LOCATION

Migratory birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus

Season: Year-round

Black Rail Laterallus jamaicensis

Season: Breeding

Burrowing Owl Athene cunicularia

Season: Year-round

California Spotted Owl Strix occidentalis occidentalis

Season: Year-round

Calliope Hummingbird Stellula calliope

Season: Breeding

Flammulated Owl Otus flammeolus

Season: Breeding

Fox Sparrow Passerella iliaca

Season: Year-round

Green-tailed Towhee Pipilo chlorurus

Season: Breeding

Lewis's Woodpecker Melanerpes lewis

Season: Wintering

Loggerhead Shrike Lanius ludovicianus

Season: Year-round

Long-billed Curlew Numenius americanus

Season: Wintering

Nuttall's Woodpecker Picoides nuttallii

Season: Year-round

Oak Titmouse Baeolophus inornatus

Season: Year-round

Olive-sided Flycatcher Contopus cooperi

Season: Breeding

Peregrine Falcon Falco peregrinus

Season: Wintering

Short-eared Owl Asio flammeus

Season: Wintering

Snowy Plover Charadrius alexandrinus

Season: Breeding

Swainson's Hawk Buteo swainsoni

Season: Breeding

Tricolored Blackbird Agelaius tricolor

Season: Year-round

Western Grebe aechmophorus occidentalis

Season: Wintering

Williamson's Sapsucker Sphyrapicus thyroideus

Season: Year-round

Yellow-billed Magpie Pica nuttalli

Season: Year-round

Wildlife refuges and fish hatcheries

THERE ARE NO REFUGES OR FISH HATCHERIES IN THIS LOCATION

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.
This location overlaps all or part of the following wetlands:

Riverine

R4SBC

Appendix D — Plants and Wildlife Observed within the Project Site

Appendix C

Plants Observed within the Promontory Village 7 Project Site

Family	Scientific Name	Common Name	*
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	Blue elderberry	N
Agavaceae	*Agoseris* sp.	Agoseris	--
Agavaceae	*Chlorogalum angustifolium*	Narrow soaproot	N
Agavaceae	*Chlorogalum pomeridianum*	Soap plant	N
Anacardiaceae	*Pistacia chinensis*	Chinese pistachio	--
Anacardiaceae	*Toxicodendron diversilobum*	Poison oak	N
Apiaceae	*Sanicula crassicaulis*	Gamble weed	N
Asteraceae	*Carduus pycnocephalus* ssp. *pycnocephalus*	Italian thistle	I
Asteraceae	*Cirsium vulgare*	Bull thistle	I
Asteraceae	*Matricaria discoidea*	Pineapple weed	--
Asteraceae	*Holocarpha virgata*	Tarweed, tarplant	N
Asteraceae	*Lactuca serriola*	Prickly lettuce	I
Asteraceae	*Silybum marianum*	Blessed milkthistle	I
Asteraceae	*Xanthium* sp.	Cocklebur	--
Boraginaceae	*Amsinckia menziesii*	Fiddleneck	N
Boraginaceae	*Plagiobothrys fulvus*	Common popcorn flower	N
Brassicaceae	*Brassica rapa*	Common mustard	I
Brassicaceae	*Phacelia cicutaria*	Caterpillar phacelia	N
Caryophyllaceae	*Spergularia bocconei*	Boccon's sand spurry	--
Convolvulaceae	*Convolvulus arvensis*	Orchard morningglory	--
Cyperaceae	*Cyperus eragrostis*	Nutsedge	N
Elymus	*Elymus caput-medusae*	Medusa head	I
Fabaceae	*Lupinus bicolor*	Annual Lupine	N
Fabaceae	*Lotus purshianus*	Bird's foot trefoil	N
Fagaceae	*Quercus douglasii*	Blue oak	N
Fagaceae	*Quercus wislizeni*	Interior live oak	N
Geraniaceae	*Erodium botrys*	Storksbill, filaree	I
Geraniaceae	*Geranium dissectum*	Cranesbill, Wild geranium	I
Juncaceae	*Juncus balticus*	Baltic rush, Wire rush	N
Juncaceae	*Juncus effusus*	Bog rush, Common rush	N
Juncaceae	*Juncus mexicanus*	Mexican rush	N
Lamiaceae	*Mentha pulegium*	Pennyroyal	I
Lamiaceae	*Mentha spicata*	spearmint	--
Lamiaceae	*Stachys albens*	Hedge-nettle	N
Moraceae	*Ficus carica*	Edible fig	I
Myrsinaceae	*Anagallis arvensis*	Scarlet pimpernel	I
Onagraceae	*Clarkia purpurea* ssp. *purpurea*	Purple clarkia, Winecup clarkia	N
Onagraceae	*Epilobium brachycarpum*	Annual fireweed	N
Pinaceae	*Pinus sabiniana*	California foothill pine	N
Plantaginaceae	*Veronica* sp.	Speedwell, brooklime	--
Poaceae	*Avena barbata*	Slim Oat, Slender Oat	I
Poaceae	*Briza minor*	Annual quaking grass, small quaking grass	I
Poaceae	*Bromus diandrus*	Ripgut grass	I
Poaceae	*Bromus hordeaceus*	Soft chess	I
Poaceae	*Cynosurus echinatus*	Bristly dogtail grass	I
Poaceae	*Festuca perennis*	Rye grass	I
Poaceae	*Hordeum marinum*	Mediterranean barley	I
Poaceae	*Hordeum murinum*	Wall barley	I
Poaceae	*Paspalum dilatatum*	Dallis grass	--
Poaceae	*Polypogon monspeliensis*	Annual beard grass, rabbitfoot grass	I
Poaceae	*Stipa pulchra*	Purple needle grass	N
Polygonaceae	*Rumex crispus*	Curly dock	I
Polygonaceae	*Rumex pulcher*	Fiddle dock	--
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	I
Salicaceae	*Populus fremontii* ssp. *fremontii*	Alamo or Fremont cottonwood	N
Salicaceae	*Salix* sp.	Willow	--
Sapindaceae	*Aesculus californica*	California Buckeye	N
Themidaceae	*Dichelostemma multiflorum*	Many flowered brodiaea	N
Themidaceae	*Brodiaea elegans*	Harvest brodiaea	N
Themidaceae	*Triteleia hyacinthina*	White brodiaea, fool's onion	N
Themidaceae	*Triteleia laza*	Ithuriel's spear	N
Verbenaceae	*Verbena bonariensis*	Purpletop	N
Vicia	*Vicia villosa*	Hairy vetch	--
Note: N = Native	**I = Invasive**		

Appendix C

Wildlife Observed within the Promontory Village 7 Project Site

Scientific Name	Common Name
Birds	
Agelaius phoeniceus	Red-winged blackbird
Aphelocoma californica	Western scrub jay
Aquila chrysaetos	Golden eagle
Baeolophus inornatus	Oak titmouse
Bubo virginianus	Great horned owl
Buteo jamaicensis	Red-tailed hawk
Euphagus cyanocephalus	Brewer's blackbird
Melanerpes formicivorus	Acorn woodpecker
Sayornis nigricans	Black phoebe
Mimus polyglottos	Northern mockingbird
Zenaida macroura	Mourning dove
Reptiles	
Crotalus oreganus	Western rattlesnake
Sceloporus occidentalis	Western fence lizard
Mammals	
Canis latrans	Mule deer
Lepus californicus	Black-tailed deer

Appendix E — Regionally Occurring Listed and Special-Status Species

Table 1 — Regionally Occurring Special-Status Species

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	--; --; --; 1B	Annual herb found in mesic areas in valley and foothill grasslands from 30 to 229 meters.	Blooming period: April – August.	**None**; although the non-native annual grassland provides habitat, this species was not observed during the April 30, May 20, and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	--; --; --; 1B	Perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland, sometimes in serpentinite soils, from 90 to 1,555 meters.	Blooming period: March – June.	**None**; although the oak woodland and non-native annual grassland provide habitat, this species was not observed during the April 30, May 20, and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Bisbee Peak rush-rose *Crocanthemum suffrutescens*	--; --; --; 3.2	Perennial evergreen shrub often found on gabbroic or lone soil and often in burned or disturbed areas within chaparral from 75 to 670 meters.	Blooming period: April – August.	**None**; the Project Site does not provide habitat for this species. Two CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
Boggs Lake hedge-hyssop *Gratiola heterosepala*	--; CE; --; 1B	Annual herb found on clay soils around the lake margins of marshes and swamps and in vernal pools from 10 to 2,375 meters.	Blooming period: April – August.	**None**; the Project Site does not provide habitat for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeeae*	--; --; --; 4	Annual herb found often in roadcuts within chaparral, cismontane woodland, and lower montane coniferous forest from 75 to 915 meters.	Blooming period: May – July.	**None**; although the oak woodland provides habitat, this species was not observed during the May 20 and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Brewer's calandrinia *Calandrinia breweri*	--; --; --; 4	Annual herb found on sandy or loamy, disturbed sites and burns within chaparral and coastal scrub from 10 to 1,220 meters.	Blooming period: March – June.	**None**; the Project Site does not provide habitat for this species.
Dwarf downingia *Downingia pusilla*	--; --; --; 2	Annual herb found occasionally in mesic areas within valley and foothill grassland and vernal pools from 1 to 445 meters.	Blooming period: March – May.	**None**; although the non-native annual grassland provides habitat, this species was not observed during the April 30 and May 20, surveys that were conducted within the evident and identifiable blooming period.
El Dorado bedstraw *Galium californicum* ssp. *sierrae*	FE; CR; --; 1B	Perennial herb found on gabbroic substrate in chaparral, cismontane woodland, and lower montane coniferous forest from 100 to 585 meters.	Blooming period: May – June.	**None**; although the oak woodland provides habitat, this species was not observed during the May 20 and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
El Dorado mule ears *Wyethia reticulata*	--; --; --; 1B	Perennial herb found on clay or gabbroic substrate within chaparral, cismontane woodland, and lower montane coniferous forest from 185 to 630 meters.	Blooming period: April – August.	**None**; the Project Site does not contain the soils required for this species. Five CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
Fresno ceanothus *Ceanothus fresnensis*	--; --; --; 4	Perennial evergreen shrub found occasionally in openings of cismontane woodland and lower montane coniferous forest from 900 to 2,103 meters.	Blooming period: May – July.	**None**; the Project Site occurs outside of the known elevation range for this species.
Hernandez bluecurls *Trichostema rubisepalum*	--; --; --; 4	Annual herb found on volcanic or serpentinite, gravelly substrate within broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and vernal pools from 300 to 1,435 meters.	Blooming period: June – August.	**None**; the Project Site does not contain the soils required for this species.
Humboldt lily *Lilium humboldtii* ssp. *humboldtii*	--; --; --; 4	Perennial bulbiferous herb found in openings of chaparral, cismontane woodland, and lower montane coniferous forest from 90 to 1,280 meters.	Blooming period: May – July.	**None**; although oak woodland provides habitat, this species was not observed during the May 20 and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Jepson's onion *Allium jepsonii*	--; --; --; 1B	Perennial bulbiferous herb found on serpentine or volcanic soils in chaparral, lower montane coniferous forest, and cismontane woodland from 300 to 1,320 meters.	Blooming period: April – August.	**None**; the Project Site does not contain the soils required for this species.
Jepson's woolly sunflower *Eriophyllum jepsonii*	--; --; --; 4	Perennial herb sometimes found on serpentinite substrate within chaparral, cismontane woodland, and coastal scrub from 200 to 1,025 meters.	Blooming period: April – June.	**None**; although the oak woodland provides habitat, this species was not observed during the April 30, May 20, and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Layne's butterweed (=ragwort) *Packera layneae*	FT; CR; --; 1B	Perennial herb found on serpentine or gabbroic, rocky substrate in cismontane woodland or chaparral from 200 to 1,085 meters.	Blooming period: April – August.	**None**; the Project Site does not contain the soils required for this species. Three CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
Legenere *Legenere limosa*	--; CT; --; 1B	Annual herb found in vernal pools from 1 to 880 meters.	Blooming period: April – June.	**None**; the Project Site does not provide habitat for this species.
Parry's horkelia *Horkelia parryi*	--; --; --; 1B	Perennial herb found on Ione formation and other soils in chaparral and cismontane woodland from 80 to 1,070 meters.	Blooming period: April – September.	**None**; although the oak woodland provides habitat, this species was not observed during the April 30, May 20, and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Pincushion navarretia *Navarretia myersii*	--; --; --; 1B	Annual herb found in vernal pools, which are often acidic, from 20 to 330 meters.	Blooming period: April – May.	**None**; the Project Site does not provide habitat for this species.
Pine Hill ceanothus *Ceanothus roderickii*	FE; CR; --; 1B	Perennial evergreen shrub found on serpentinite or gabbroic substrate in chaparral or cismontane woodland from 245 to 1,090 meters.	Blooming period: April – June.	**None**; the Project Site does not contain the soils required for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Pine Hill flannelbush *Fremontodendron decumbens*	FE; CR; --; 1B	Perennial evergreen shrub found in chaparral and cismontane woodland on rocky gabbroic or serpentinite soils from 425 to 760 meters.	Blooming period: April – July.	**None**; the Project Site does not contain the soils required for this species.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Red Hills soaproot *Chlorogalum grandiflorum*	--; --; --; 1B	Perennial bulbiferous herb found in chaparral, cismontane woodland, or lower montane coniferous forest on gabbro or serpentine soils from 245 to 1,240 meters.	Blooming period: May – June.	**None**; the Project Site does not contain the soils required for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Sacramento orcutt grass *Orcuttia viscida*	FE; CE; --; 1B	Annual herb found in vernal pools from 30 to 100 meters.	Blooming period: April – September.	**None**; the Project Site does not provide habitat for this species.
Sanford's arrowhead *Sagittaria sanfordii*	--; --; --; 1B	Perennial rhizomatous herb found in marshes and swamps in assorted shallow freshwater areas from 0 to 650 meters.	Blooming period: May – October.	**None**; the Project Site does not provide habitat for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Sanborn's onion *Allium sanbornii* var. *sanbornii*	--; --; --; 4	Perennial bulbiferous herb usually found on serpentinite, gravelly substrate within chaparral, cismontane woodland, and lower montane coniferous forest from 260 to 1,510 meters.	Blooming period: May – September.	**None**; although the oak woodland provides habitat, this species was not observed during the May 20 and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Slender orcutt grass *Orcuttia tenuis*	FT; CE; --; 1B	Annual herb found in vernal pools that are often gravelly, from 35 to 1,760 meters.	Blooming period: May – October.	**None**; the Project Site does not provide habitat for this species.
Starved daisy *Erigeron miser*	--; --; --; 1B	Perennial herb found occasionally on rocky ground in upper montane coniferous forest from 1,840 to 2,620 meters.	Blooming period: June – October.	**None**; the Project Site does not provide habitat for this species.
Stebbins' morning glory *Calystegia stebbinsii*	FE; CE; --; 1B	Perennial rhizomatous herb found occasionally in openings of chaparral and cismontane woodland on gabbro or serpentinite soils from 185 to 1,090 meters.	Blooming period: April – July.	**None**; the Project Site does not contain the soils required for this species.
Streambank spring beauty *Claytonia parviflora* ssp. *grandiflora*	--; --; --; 4	Annual herb found on rocky substrate within cismontane woodland from 250 to 1,200 meters.	Blooming period: February – May.	**None**; although the oak woodland provides habitat, this species was not observed during the April 30 and May 20, 2015 surveys that were conducted within the evident and identifiable blooming period.
Tuolumne button-celery *Eryngium pinnatisectum*	--; --; --; 1B	Annual to perennial herb found in mesic areas of cismontane woodland, lower montane coniferous forest, or vernal pools from 70 to 915 meters.	Blooming period: May – August.	**None**; although the oak woodland provides habitat, this species was not observed during the May 20 and June 5, 2015 surveys that were conducted within the evident and identifiable blooming period.
Wildlife				
Invertebrates				
California linderiella *Linderiella occidentalis*	--; CSC; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	Wet season: December to May (adults) Dry season: June to November (cysts)	**None**; the Project Site does not provide habitat for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT; --; --; --	Blue elderberry shrubs usually associated with riparian areas.	Adults emerge in spring until June. Exit holes visible year – round.	**High**; the Project Site contains elderberry shrubs within the riparian habitat along the perennial drainage. Two CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
Vernal pool fairy shrimp *Branchinecta lynchi*	FT; --; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**None**; the Project Site does not provide habitat for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Vernal pool tadpole shrimp *Lepidurus packardi*	FE; --; --; --	Vernal pools, swales, and ephemeral freshwater habitat.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	**None**; the Project Site does not provide habitat for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Amphibians/Reptiles				
California red-legged frog *Rana draytonii*	FT; CSC; --; --	Requires a permanent water source and is typically found along quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation. Believed extirpated from the Central Valley floor since 1970s.	Aquatic surveys of breeding sites between January and September. Optimally after April 15.	**Low**; the intermittent and perennial drainages provide aquatic habitat, the riparian habitat surrounding the intermittent and perennial drainages provides upland habitat, and the non-native annual grassland provides overland movement; however, the Project Site occurs outside of the geographical range for the species and this species was not observed during the biological surveys. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
California tiger salamander *Ambystoma californiense*	FT; CT; --; --	Ponded water required for breeding. Adults spend summer in small mammal burrows. This species is not known to occur within El Dorado County.	Drift fence studies during fall and winter for upland habitats.	**None**; the species in not known to occur in El Dorado County and the Project Site does not provide habitat for this species.
Coast (California) horned lizard *Phrynosoma blainvillii*	--; CSC; --; --	Inhabits open areas of sandy soils and low vegetation in valleys, foothills, and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose sandy soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.	Year – round (excluding extended periods of low temperatures or extreme heat)	**None**; the Project Site does not contain the soils inhabited by the species.
Giant garter snake *Thamnophis gigas*	FT; CT; --; --	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November – mid March). This species is known from	Active outside of dormancy period November – mid March	**None**; the species in not known to occur in El Dorado County.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
		Sacramento, Sutter, Butte, Colusa, and Glenn counties.		
Foothill yellow-legged frog *Rana boylii*	--; CSC; --; --	Found in partially shaded, permanent, slow-moving streams or channels with rocky or muddy bottoms and open, sunny banks within chaparral, open woodland, and forest.	March – June	**None**; although the perennial drainage provides habitat, it is densely vegetated and fully shaded by riparian vegetation, which does not provide habitat for this species.
Western pond turtle *Emys marmorata*	--; CSC; --; --	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	Active outside of dormancy period November – February	**High**; the perennial and intermittent drainages provide aquatic habitat for this species. The non-native annual grassland and riparian habitat provide upland habitat for this species, however, this species was not observed during the biological surveys. Three CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
Western spadefoot *Spea hammondii*	--; CSC; --; --	Found in open grasslands and woodlands. Requires vernal pools or seasonal wetlands for breeding. Known from Alameda, Butte, Calaveras, Colusa, Fresno, Glenn, Kern, Kings, Los Angeles, Madera, Mariposa, Merced, Monterey, Orange, Placer, Riverside, Sacramento, San Benito, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Siskiyou, Stanislaus, Tehama, Tulare, Ventura and Yolo counties.	Year – round	**None**; although seasonal wetlands provide marginal habitat, the Project Site occurs outside of the known geographic range for this species.
Fish				
Central Valley steelhead *Oncorhynchus mykiss*	FT; --; --; --	Inhabits rivers and streams tributary to the Sacramento-San Joaquin Rivers and Delta ecosystems.	Spawn in winter and spring.	**None**; the drainages within the Project Site are not deep enough to provide fish passage.
Delta smelt *Hypomesus transpacificus*	FT; CE; --; --	Inhabits shallow fresh or brackish water tributary to the Delta ecosystem; spawns in freshwater sloughs and channel edgewaters. Known almost exclusively in the Fresno-San Joaquin estuary.	Spawn December – July. Present year – round in delta.	**None**; the drainages within the Project Site are not deep enough to provide fish passage.
Birds				
Bald eagle *Haliaeetus leucocephalus*	FD; CFP, CE; --; --	Breeding habitat most commonly includes areas within 2.5 miles (4.0 kilometers) of coastal areas, bays, rivers, lakes, and reservoirs. Nests usually are in tall trees or on pinnacles or cliffs near water.	Winter	**None**; although the Project Site occurs approximately 1.24 miles (2.0 kilometers) from Folsom Lake, which provides breeding habitat, the trees within the Project Site do not provide breeding habitat. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Bank swallow *Riparia*	--; CT; --; --	Nests in riverbanks and forages over riparian areas and adjacent uplands.	April – July	**None**; the Project Site does not provide nesting habitat for this species.
Burrowing owl *Athene cunicularia*	--; CSC; --; -- (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.	Year – round; Breeding season surveys between March and August.	**Low**; the non-native annual grassland provides marginal habitat for this species given the steep terrain and lack of burrows within the Project Site that could be utilized by this species. Four CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
California black rail *Laterallus jamaicensis coturniculus*	--; CT; --; --	Saltwater, brackish, and freshwater marshes. This species is known from Alameda, Butte, Contra Costa, Imperial, Los Angeles, Marin, Napa, Nevada, Orange, Placer, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma, Sutter, and Yuba counties, in California.	Year – round	**None**; the species in not known to occur in El Dorado County.
Golden eagle *Aquila chrysaetos*	--; CFP; --; -- (nesting and wintering)	Open and semi-open areas up to 12,000 feet in elevation. Builds stick nests on cliffs, in trees, or on man-made structures.	Year – round	**Present**; the non-native annual grassland provides foraging habitat for this species. An active nest was observed in a foothill pine (*Pinus sabiniana*) approximately 0.11 miles east of the Project Site from March 2015 to date. The trees within the oak woodland provide marginal nesting habitat. A golden eagle was observed flying over the Project Site during the April 30, 2015 and July 1, 2015 biological surveys. One CNDDB occurrences is documented within 5 miles of the Project Site (CDFW 2016).
Grasshopper sparrow *Ammodramus savannarum*	--; CSC; --; --	Frequents dense, dry, or well drained grassland, especially native grassland. Nests at base of overhanging clump of grass. This species is known from Los Angeles, Mendocino, Orange, Placer, Sacramento, San Diego, San Luis Obispo, Solano, and Yuba counties, in California.	April – July	**None**; the species in not known to occur in El Dorado County.
Purple martin *Progne subis*	--; CSC; --; --	Often nests in tall, old trees near body of water in woodland and conifer habitats.	Year – round	**None**; the Project Site does not provide nesting habitat for this species.
Snowy plover *Charadrius alexandrinus*	FT; --; --; --	Nests on the ground on broad open beaches or salt or dry mud flats, where vegetation is sparse or absent (small clumps of vegetation are used for cover by chicks); nests beside or under objects or in open areas.	Year – round	**None**; the Project Site does not provide habitat for this species.

Special-Status Species	Regulatory Status (Federal; State; Local; CNPS)	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Swainson's hawk *Buteo swainsoni*	--; CT; --; --	Nest peripherally to Valley riparian systems lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. This species is known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Napa, Placer, Plumas, Sacramento, San Bernardino, San Joaquin, San Luis Obispo, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties.	March – October	**None**; although the trees provide potential nesting habitat and the non-native annual grassland provides foraging habitat, this species is not known to occur in El Dorado County. CNDDB occurrences are documented within 5 miles of the Project Site, within Sacramento County (CDFW 2016).
Tricolored blackbird *Agelaius tricolor*	--; CSC; --; -- (nesting colony)	Nests in dense blackberry, cattail, tules, bulrushes, sedges, willow, or wild rose within freshwater marshes. Nests in large colonies of at least 50 pairs (up to thousands of individuals).	Year – round	**None**; although the non-native annual grassland provides foraging habitat, The Project Site does not contain freshwater marshes, which provide nesting habitat for this species. Four CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
White-tailed kite *Elanus leucurus*	--; CFP; --; -- (nesting)	Nests in isolated trees or woodland areas with suitable open foraging habitat.	February 15 – August 31	**High**; the trees within the oak woodland and non-native annual grassland provide nesting habitat for this species. Two CNDDB occurrences are documented within 5 miles of the Project Site. One of the occurrences is documented within the Project Site (CDFW 2016).
Mammals				
American badger *Taxidea taxus*	--; CSC; --; --	Found in a variety of grasslands, shrubslands, and open woodlands throughout California.	Year – round	**Low**; the non-native annual grassland provides habitat; however, suitable burrows were not observed during biological surveys.
Fisher *Martes pennanti*	FC; CSC; --; --	Occurs in intermediate to large-tree stages of coniferous and deciduous forests.	Year – round	**None**; there is no habitat for this species within the Project Site.
Pallid bat *Antrozous pallidus*	--; CSC; --; --	Most abundant in oak woodland, savannah, and riparian habitats. Roosts in crevices and hollows in trees, rocks, cliffs, bridges, and buildings.	Year – round	**Low**; the trees within the oak woodland, riparian, and non-native annual grassland provide day-roosting habitat and the non-native annual grassland provides foraging habitat for this species.

Federally-Listed Species:
FE = federal endangered
FT = federal threatened
FC = candidate
PT = proposed threatened
FPD = proposed for delisting
FD = delisted

California State Ranked Species:
CE = California state endangered
CT = California state threatened
CR = California state rare
CSC = California species of special Concern
CCT = California state threatened candidate

CNPS* Rank Categories:
1A = plants presumed extinct in California
1B = plants rare, threatened, or endangered in California and elsewhere
2 = plants rare, threatened, or endangered in California, but common elsewhere
3 = plants about which we need more information
4 = plants of limited distribution

Source: Foothill Associates

Special-Status Species list generated from queries of the USFWS for the Project Site and CNPS and CNDDB databases for the *Clarksville* quadrangle and eight surrounding quadrangles.

Table 2 — Nesting Birds of Conservation Concern Protected under the Migratory Bird Treaty Act (MBTA) and §3503.5 Department of Fish and Game Code

Birds of Conservation Concern	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Calliope hummingbird *Stellula calliope*	Nest site is usually in a pine or other conifer, sometimes in deciduous shrub. Usually 6-40 feet up, can be much higher. Sometimes built on base of old pine cone. Breeds from 1,200 meters up to the tree line.	April – August	**None**; the Project Site occurs outside of the known geographic breeding range for this species.
Costa's hummingbird *Calypte costae*	Inhabits desert and semi-desert, arid brushy foothills and chaparral. In California, known from Inyo and San Bernardino counties.	Depends on location	**None**; the Project Site occurs outside of the known geographic breeding range for this species.
Flammulated owl *Otus flammeolus*	Nests in open pine forests. Nest site is in cavity in tree, usually old woodpecker hole between 4 to 12 meters above ground.	April – September	**None**; the Project Site does not provide nesting habitat for this species.
Fox sparrow *Passerella liaca*	Breed in coniferous forest and dense mountain scrub.	Year – round	**None**; the Project Site does not provide nesting habitat for this species.
Great blue heron *Ardea herodias*	Inhabits both freshwater and saltwater habitats and forages in grasslands and agricultural field. Breeding colonies are located within 2 to 4 miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests.	May occur during migration	**None**; although the non-native annual grassland provides foraging habitat, the Project Site does not provide nesting habitat for this species. Three CNDDB occurrences are documented within 5 miles of the Project Site (CDFW 2016).
Great egret *Ardea alba*	Occurs in freshwater and saltwater habitats.	Year – round	**None**; although the non-native annual grassland provides foraging habitat, the Project Site does not provide nesting habitat for this species. One CNDDB occurrence is documented within 5 miles of the Project Site (CDFW 2016).
Green-tailed towhee *Pipilo chlorurus*	Breeds in a variety of semi-open habitats, mostly in mountains. Nest site is on the ground or in low shrubs such as sagebrush or manzanita, one meter or less above the ground.	May – August 15	**None**; the Project Site does not occur within the known geographical breeding range for this species.
Lewis's woodpecker *Melanerpes lewis*	Breeds in open forest and woodland, often logged and burned, including oak, coniferous forest (primarily ponderosa pine), riparian woodland and orchards, and less commonly in pinyon/juniper. Nest site is cavity excavated in tree (tree or limb usually dead), sometimes in utility pole, from 1.5 to greater than 30 meters above ground.	Year – round	**Low**; the trees within the oak woodland and riparian habitat provide nesting habitat for this species.
Loggerhead shrike *Lanius ludovicianus*	Occurs in agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Nest site is placed in a dense and often thorny tree or shrub, usually 5 to 30 feet above the ground. Nest is usually well hidden by foliage. Prefers semi-open country. Known from Alameda, Butte, Contra Costa, Fresno, Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Stanislaus, and Tulare counties.	Year – round	**None**; the Project Site does not occur within the known geographical breeding range for this species.
Nuttall's woodpecker *Picoides nuttallii*	Occurs in oak forest and woodland, chaparral, and riparian. Nest site is cavity excavated in tree between one and 18 meters above the ground.	Year – round	**Low**; the trees within the oak woodland and riparian habitat provide nesting habitat for this species.
Oak titmouse *Baeolophus inornatus*	Nest site is in a cavity in tree, stump, fence post, or pole. Most commonly found in oak woodland where oaks meet streamside trees or pines, rarely found in coniferous forest in mountains.	Year – round	**Low**; the trees within the oak woodland provide nesting habitat for this species.
Short-eared owl *Asio flammeus*	Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Nests usually located on dry sites with enough vegetation to conceal incubating female.	Year – round	**Low**; the non-native annual grassland provides nesting habitat for this species.
Peregrine falcon *Falco peregrinus*	Nests on man-made structures and in the hollows of old trees or open tops of cypress, sycamore, or cottonwood trees 50 to 90 feet above the ground, mostly in woodland, forest, and coastal habitats.	Year – round (some migrate)	**Low**; the trees within the oak woodland provide nesting habitat for this species.
White headed woodpecker *Picoides albolarvatus*	Occurs in montane coniferous forest. Nest site is in mountain pine forests in heavy dead stub of tree (especially pines, also aspens, oaks, and others), usually 2 to 5 meters above ground.	Year – round	**None**; the Project Site does not provide habitat for this species.
Williamson's sapsucker *Sphyrapicus thyroideus*	Found in montane coniferous forests. Nest site is cavity in tree, often in aspen, pine, or fir, usually 1.5 – 18 meters above ground. Favors trees with dead heartwood and live outer layer, and may return to dig new nest holes in same tree year after year.	Year – round	**None**; the Project Site does not provide habitat for this species.
Yellow-billed magpie *Pica nuttalli*	Occurs in broken oak woodland interspersed with grasslands or cultivated lands, open riparian woodland, and savanna.	Year – round	**Low**; the trees within the oak woodland and riparian habitat provide nesting habitat for this species.

Migratory Bird Treaty Act and Golden Eagle Protection Act list generated from queries of the USFWS for the Project Site (USFWS 2015).

California Red-Legged Frog (*Rana draytonii*)
Protocol-Level Survey Report

Promontory Village 7 ± 182-Acre Site
El Dorado County, California

Prepared for:

Russell-Promontory, LLC

August 10, 2016

Prepared by:

FOOTHILL ASSOCIATES

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Executive Summary

Foothill Associates' prepared this California Red-Legged Frog (*Rana draytonii*; CRLF) Survey Report (CRLF Survey Report) for the approximately ±182-acre Promontory Village 7 Project (Study Area), in El Dorado County, California. The purpose of this CRLF Survey Report is to summarize the results of the protocol-level surveys conducted in accordance with the *Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog* (Guidance; USFWS 2005). In accordance with the Guidance, six surveys were conducted during the breeding season and two surveys were conducted during the non-breeding season. No CRLF tadpoles were observed and no CRLF adults were observed or heard. Although the Study Area provides upland and breeding habitat, CRLF are not present within the Study Area.

1.0 INTRODUCTION

This CRLF Survey Report provides a methodology of the protocol-level CRLF surveys, discusses the suitability of habitat within the Study Area, and documents the results of the protocol-level surveys conducted within the Study Area.

1.1. Project Location

The ±182-acre Study Area is located in a residential area in El Dorado Hills within the western border of El Dorado County, adjacent to the Sacramento County line. The Study Area is bordered by Galston Drive to the west, by Alexandra Drive to the north, by Beatty Drive to the east, and annual grassland to the south. The Study Area is within Township 10 North, Range 8 East, Sections 28, 33, and 34 of the *Clarksville* quadrangle. The approximate location of the Study Area is 38° 40' 50.029" North, 121° 5' 52.670" West (**Figure 1**).

1.2. Previous Studies Conducted in the Vicinity of the Study Area

Foothill Associates conducted a Habitat Site Assessment and modified protocol surveys for the CRLF for the Silva Valley Interchange (SVI) Project (08ESMF00-TA-0871-1), which is located northeast of the Study Area, as part of the Section 7 Consultation with the U.S. Fish and Wildlife Service (USFWS) prior to issuance of the Letter of Permission by the U.S. Army Corps of Engineers (Corps). Aquatic habitats within 1.6 kilometers (km) (1 mile) of the SVI Project were evaluated to determine the potential for CRLF use. As identified in the Habitat Site Assessment Report (Foothill Associates 2012a), no CRLF was observed. A single day and night survey were conducted at three locations east of the Study Area in September 2012 and March 2013, in accordance with the USFWS informal consultation letter for the SVI Project, dated August 6, 2012. The Study Area is located between 1.7 and 2.7 miles northwest of the three evaluation areas requested by the USFWS (**Figure 2**). The survey results were provided to the USFWS in reports, dated November 13, 2012 (Foothill Associates 2012b) and April 2, 2013 (Foothill Associates 2013). No CRLF were observed during the surveys, and high populations of predators, including bullfrogs and mosquitofish (*Gambusia affinis*), were observed.

ECORP Consulting, Inc. prepared a Biological Assessment for the approximately 1,400-acre Folsom South Project (FSP), which is located 2 miles south of the Study Area (**Figure 2**) on January 12, 2010. The Biological Assessment concluded that the FSP is located outside of the geographical range for CRLF. In the Biological Opinion prepared for the FSP (81420-2010-F-0620-1), dated April 2, 2014, the USFWS concurred with the findings identified within the Biological Assessment and did not address CRLF.

At the request of the California Department of Fish and Wildlife (CDFW), CRLF surveys of two seasonal drainages were conducted on a property approximately 0.4 and 0.5 miles south of the Study Area on March 15 and 18, 2015. A day and night survey were conducted in accordance with the 2005 protocol on each day. No CRLF were observed during either of these surveys. Only Sierran chorus frogs (*Pseudacris sierra*), water striders, flat worms, and diving beetles were observed in the aquatic features. The results of the surveys are provided in a letter report prepared by Foothill Associates, dated March 24, 2015.

1.3. Documented Occurrences

There is one CNDDB occurrence approximately 3.5 miles north of the Study Area along a small drainage feeding directly into the east side of Folsom Lake (Occurrence Number 814) (CDFW 2016), however, the validity of this record is highly questionable due to the low elevation (approximately 500 feet above MSL), the proximity to urban development and to Folsom Lake, and the abundant non-native predators that it supports (Rana Resources 2013). The record states that a juvenile frog was sighted on a small footbridge crossing a drainage leading into Folsom Lake from an adjacent residential development. This frog was most likely a juvenile bullfrog, which, to the untrained eye, can be easily confused with a juvenile CRLF (Rana Resources 2013). Even if this were a valid record, this location is separated from the Study Area by a number of impassible barriers including major roadways and urban development.

The nearest valid CNDDB occurrences (Occurrence Number 1377) is from 1942 and is over 15 miles southeast of the Study Area at 820 feet above mean sea level (MSL) (**Figure 3**) (CDFW 2016). The record states that three CRLF were collected in an area near the mouth of the North Fork Cosumnes River, just north of the confluence with the Middle Fork Cosumnes River.

The nearest known CNDDB occurrences (Occurrence Numbers 1284 and 1317) to the northeast are approximately 23 miles from the Study Area at over 2,200 feet above MSL (**Figure 3**) (CDFW 2016). These occurrences state that CRLF was observed in a series of small pools/wet areas in a drainage stream channel. The nearest known CRLF occurrence (Occurrence Number 568) to the east is 27 miles from the Study Area at over 3,900 feet above MSL (**Figure 3**) (CDFW 2016). This record states that the CRLF adults and a tadpole were observed in Spivey Pond and that this location is one of two remaining populations known within the Sierra Nevada range. The nearest known CRLF occurrence (Occurrence Number 671) to the south-southeast is 35 miles southeast from the Study Area at approximately 850 feet MSL (**Figure 3**) (CDFW 2016). The record states that three CRLF adults were observed in Youngs Creek. The nearest known CRLF occurrences to the west (Occurrence Numbers 401 and 739) are located in Napa County northwest of Vacaville, approximately 60 miles from the Study Area (CDFW 2016).

2.0 METHODS

Resumes of the biologists conducting the surveys are included in **Appendix A**. Foothill Associates' Senior Biologist Kelly Bayne, M.S. (10(a)(1)(A) Recovery Permit TE-185595 for CRLF) conducted one day-time and one night-time protocol-level non-breeding season survey within the Study Area on July 1, 2015. The day-time survey was conducted between 2:00 P.M. and 5:15 P.M. Sunset occurred at 8:55 P.M. The night-time survey was conducted between 10:45 P.M. and 11:45 P.M. The night-time survey commenced more than an hour after sunset.

Ms. Bayne conducted two day-time and Ms. Bayne and Foothill Associates' Biologist Marisa Brilts conducted four night-time protocol-level breeding season surveys within Study Area. The two day-time surveys were conducted between 2:00 P.M. and 3:30 P.M. on January 12, 2016 and February 2, 2016. The night-time surveys were conducted between 6:35 P.M. and 8:30 P.M. on January 12 and 26, 2016 and February 2 and 9, 2016. The night-time survey commenced over an hour after sunset.

Prior to the surveys, all aquatic equipment, including rubber boots, were decontaminated with a bleach solution and rinsed clean. Day time surveys began with a few minutes of quietly listening for frog calls prior to approaching the perennial and intermittent drainages. The surveyor subsequently walked transects along the edges of the aquatic features and in 20-foot intervals in uplands parallel to the perennial and intermittent drainages. All small woody debris, refuse, and dense vegetation were inspected for presence of any frogs or other amphibians. The surveyor searched for CRLF egg masses, larvae, metamorphs, juveniles, and adults, with special attention paid to areas of standing water.

Night-time surveys began with a few minutes of quietly listening for frog calls prior to approaching the perennial and intermittent drainages. The surveyor subsequently walked transects along the edges of the aquatic features and in 20-foot intervals in uplands parallel to the perennial and intermittent drainages. All small woody debris, refuse, and dense vegetation were inspected for presence of any frogs or other amphibians or reptiles. The surveyor searched for CRLF egg masses, larvae, metamorphs, juveniles, and adults, with special attention paid to areas of standing water. A USFWS-approved flashlight (Energizer 4 D-cell or Browning Pro-Hunter RGB) and a headlamp (Swiss-Gear and Petzl Tikkina) were used to make visual observations during the night time surveys.

During both day-time and night-time surveys, binoculars (Nikon Monarch 8x42 and Bushnell H Waterproof 10x42) were used to detect eye shine and to identify amphibians present during the day-time and night-time surveys. Water temperature and air temperature were obtained with an analog thermometer. Wind speed was measured using a MASTECH MS 6252A Digital Anemometer. All data and species' observations were recorded on CRLF Survey Data Sheets and are included in **Appendix B**.

Surveyors used *Western Reptiles and Amphibians* (Stebbins 2003) as a field guide for frog identification. *Frog and Toad Calls of the Pacific Coast: Vanishing Voices* (Davidson 1995) was available to surveyors during surveys in compact disc format to aid in identification of frog calls when necessary. Photographs of the aquatic features are provided in **Appendix C**.

3.0 RESULTS

3.1. Suitability of Habitat Surrounding the Study Area

The Study Area is surrounded by residential development. The Study Area is bordered by Galston Drive followed by residential development to the west; by Alexandra Drive followed by residential development to the north; by Beatty Drive followed by annual grassland and residential development to the east; and by annual grassland followed by residential development to the south.

3.2. Suitable Habitat within the Study Area

The Study Area is comprised of non-native annual grassland, oak woodland, riparian, developed, depressional seasonal wetland, slope seep, perennial drainage, intermittent drainage, and ephemeral drainage (**Figure 4**). The topography is comprised of a steep slope that descends from the center of the Study Area to the west and east sides of the Study Area. Elevations range from 880 feet above MSL in the central portion of the Study Area to 435 feet above MSL in the northwestern portion of the Study Area.

The steep, small, approximately one- to three-foot-wide and deep ephemeral drainages do not provide suitable aquatic habitat for CRLF given the lack of riparian vegetation and lack of water present during any of the surveys. The unnamed intermittent drainage provides low quality habitat for this species due to the lack of deep pools within the Study Area and lack of water present during the July 1, 2015 survey. The riparian habitat surrounding the intermittent drainage provides upland habitat. The non-native annual grassland surrounding the intermittent drainage and riparian habitat provides upland overland migration for CRLF. Although the intermittent drainage provides breeding habitat, the drainage initiates downstream from a seep beneath a road to the north of the Study Area and no other aquatic features are present in the vicinity of this area. Furthermore, the likelihood of CRLF entering the downstream extent of the intermittent drainage would be low given that the entry point would require passage through a culvert beneath Sophia Parkway.

The perennial drainage provides breeding habitat for this species. The riparian habitat surrounding the perennial drainage provides upland habitat, although the riparian vegetation is extremely dense and impenetrable along the majority of the length of the perennial drainage. The non-native annual grassland surrounding the perennial drainage and the riparian corridor provides upland overland migration for CRLF. Although the perennial drainage provides breeding habitat, the likelihood of CRLF entering the drainage within the Study Area from surrounding areas outside of the Study Area is extremely low given that all entry points into the Study Area would require passage through culverts beneath Beatty Drive.

3.3. Protocol-Level Survey Results

During the non-breeding season surveys, no water was observed within the intermittent drainage and only ponded water was present within the perennial drainage. No CRLF were observed or heard during any of the surveys. No Sierran treefrog (*Pseudacris sierra*) tadpoles were observed within the perennial or intermittent drainages. In the non-breeding season Sierran treefrogs were heard in the hundreds in the vicinity of the perennial drainage and within the tens in the vicinity of the intermittent drainage, but heard only in the tens near the perennial drainage in the breeding season. Water striders were observed within ponded areas within the perennial drainage during the non-breeding season surveys. Other birds and wildlife observed within the Study Area during the protocol-level surveys are documented on the CRLF Survey Data Sheets in **Appendix B**.

4.0 CONCLUSIONS

Although marginally suitable aquatic habitat is present within the intermittent drainage, suitable aquatic habitat is present within the perennial drainage, and upland habitat is present within the riparian vegetation and annual grassland surrounding the drainages, the Study Area occurs outside the known geographic and elevation ranges for CRLF and no CRLF were observed or heard during the six protocol-level breeding season surveys and the two protocol-level non-breeding season surveys. Therefore, CRLF do not occur within the Study Area.

5.0 REFERENCES

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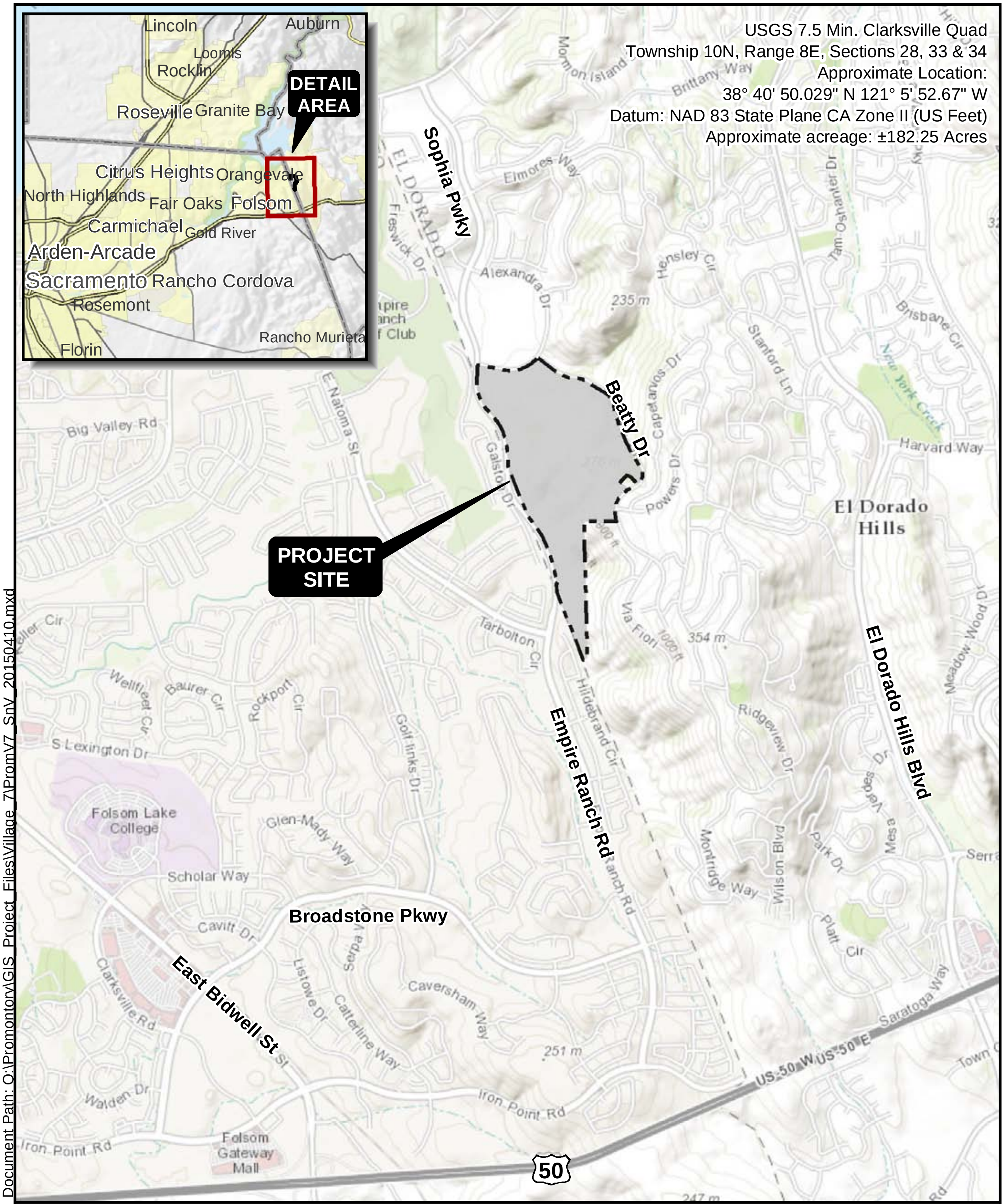

USGS 7.5 Min. Clarksville Quad
Township 10N, Range 8E, Sections 28, 33 & 34
Approximate Location:
38° 40' 50.029" N 121° 5' 52.67" W
Datum: NAD 83 State Plane CA Zone II (US Feet)
Approximate acreage: ±182.25 Acres

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PROMONTORY VILLAGE 7 SITE AND VICINITY

FOOTHILL ASSOCIATES
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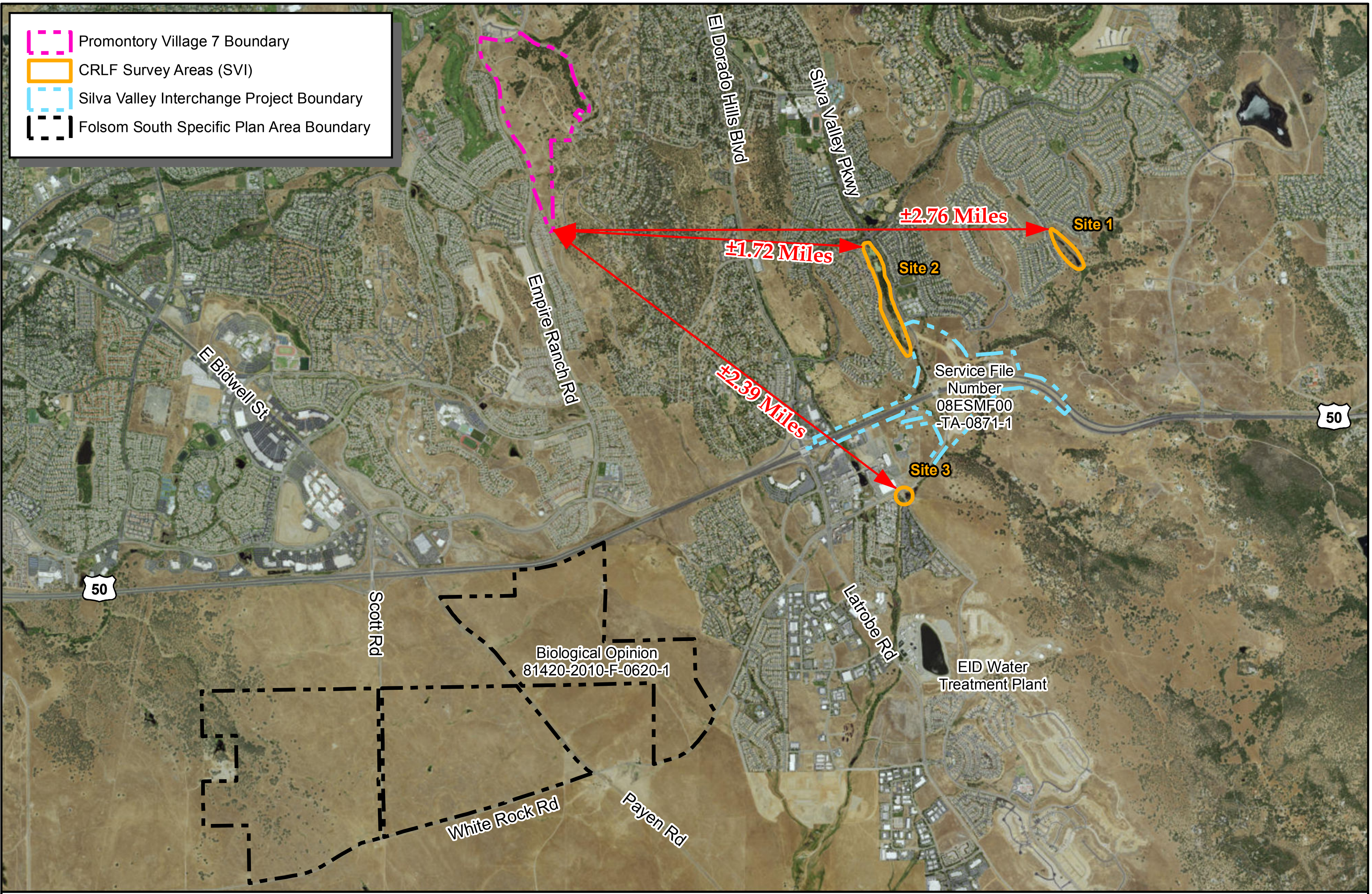
© 2016

N

0 0.25 0.5
Miles
1 in = 0.5 miles

Drawn By: MUB
Date: 07/16/2015

FIGURE 1



CRLF SURVEY AREAS

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Drawn By: MUB
Date: 07/12/2016

FIGURE 2

PROMONTORY VILLAGE 7

Document Name: Prom_V7_CRLF_SVI_SurveyAreas_20160712 : 7/12/2016 12:03:11 PM

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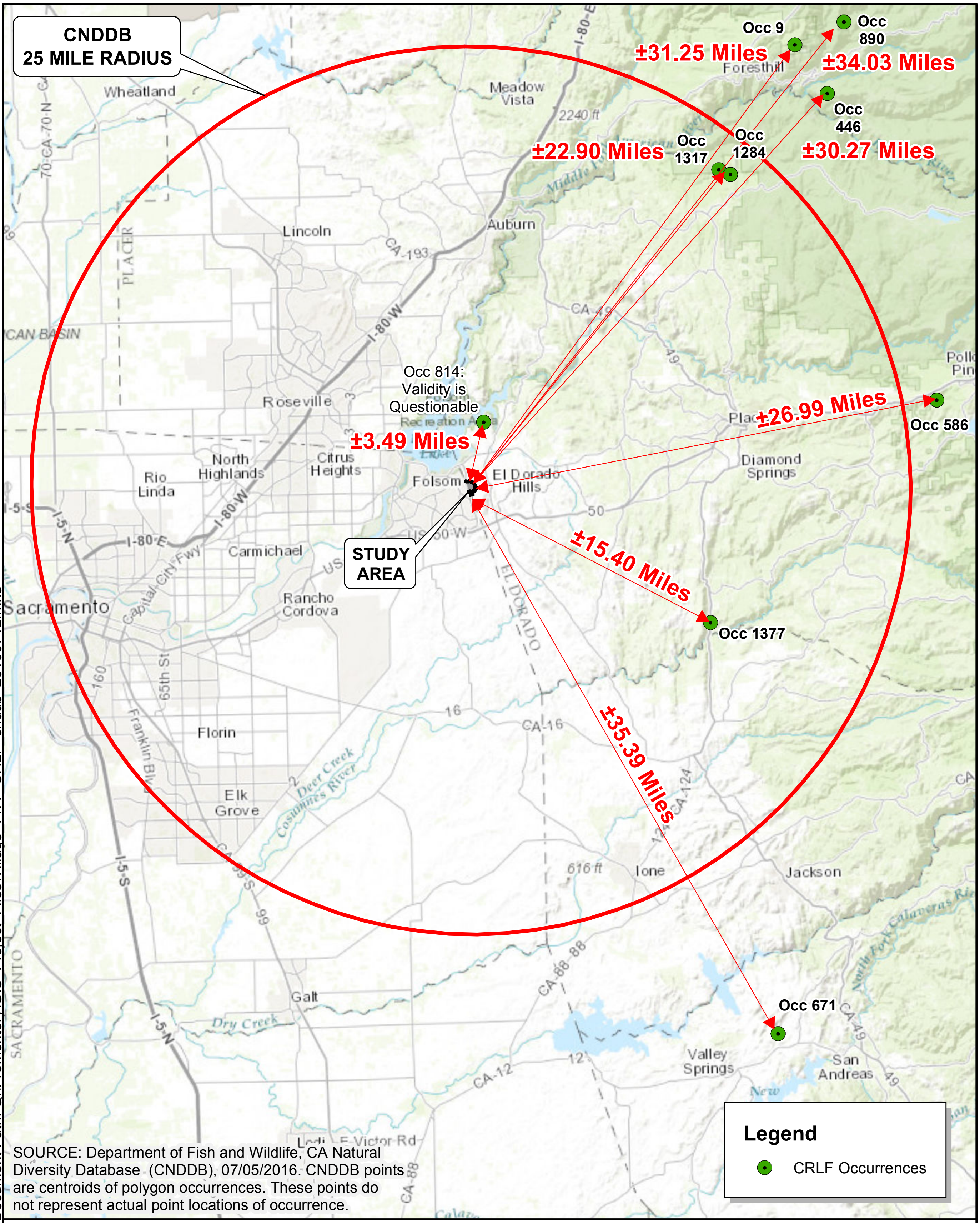

SOURCE: Department of Fish and Wildlife, CA Natural Diversity Database (CNDDB), 07/05/2016. CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

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CNDDB Occurrences for CRLF within 25 Miles of the Study Area

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N

0 5 10
SCALE IN MILES

Drawn By: MUB
Date: 07/12/2016

FIGURE 3

PROMONTORY VILLAGE 7

Document Name: V7_CRLF_cnddb_20160712 : Date Saved: 7/12/2016 11:58:50 AM

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PROMONTORY VILLAGE 7 BIOLOGICAL COMMUNITIES

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N

0 350 700
Feet
1 inch = 700 feet

Drawn By: MUB
Date: 08/04/2016

FIGURE 4

Appendix A — Resumes of Qualified Biologists

FOOTHILL ASSOCIATES

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Kelly Bayne, ISA

Senior Regulatory Biologist

Education

M.S. Forestry Sciences, California Polytechnic State University, San Luis Obispo, California, 2006

Certifications and Permits

USFWS Recovery Permit for California Tiger Salamander, California Red-Legged Frog, and Vernal Pool Branchiopods (TE-185595)

ISA Certified Arborist (WE-7741A)

CDFW Scientific Collecting Permit (801074-03)

CDFW, Rare, Threatened, and Endangered Plant Collecting Permit (09053)

Training

Advanced Hydric Soils, Wetlands Training Institute (2016)

CRAM Vernal Pool Training (2015)

U.S. Army Corps of Engineers Wetland Delineation Training Program, Richard Chinn Environmental Training Inc., Sacramento, California, 2009

WPT training (2009)

Southwestern Willow Flycatcher workshop (2012)

Bird identification class (2010)

Introduction to Plant Families, UC Berkeley (2013)

Plant tax class using new Jepson Manual, UC Davis (2013)

Botany lab and field class, Sacramento City College (2009)

Asteraceae family taxonomy class, Chico Herbarium (2009)

Experience

Cardno ENTRIX, Project Scientist

AES, Senior Biologist

Sycamore Environmental, Biologist

Kelly Bayne is experienced in planning and conducting biological surveys, supervising field crews, documenting results, and negotiating resolutions with regulatory agencies. Ms. Bayne works closely with federal and state agencies, including the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), and California Department of Fish and Wildlife (CDFW). Ms. Bayne has over ten years of experience preparing state and federal permit applications, biological assessments, jurisdictional delineations, botanical and biological reports, constraints analyses, and biological sections of California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) documents, including Initial Studies (IS), Initial Studies/Mitigated Negative Declarations (IS/MNDs), Environmental Impact Reports (EIR), Environmental Assessments (EA), and Environmental Impacts Statements (EIS). She has over 14 years of experience in conducting fieldwork throughout California, including special status plant and wildlife surveys, such as USFWS protocol level California tiger salamander (CTS), vernal pool branchiopod, and California red-legged frog (CRLF) (Recovery Permit Number TE-185595) surveys, delineations of waters of the U.S., plant community mapping, habitat assessments, arborist surveys (ISA Certification Number WE-7741A), environmental awareness training, and preconstruction and construction monitoring for special status wildlife and sensitive habitat types.

Representative Experience

Auburn Lake Trails Water Treatment Plant, El Dorado County, California. protocol level breeding season CRLF surveys. 2016.

Promontory Village 7, El Dorado Hills, El Dorado County California. Conducted biological, botanical, delineation, and protocol level breeding season CRLF surveys. Prepared Delineation, Biological Resources Assessment, and CRLF Breeding and Nonbreeding Survey Report. 2015-2016.

Promontory Village 8, El Dorado Hills, California. Conducted preconstruction bird and bat surveys, modified protocol level breeding season CRLF surveys, golden eagle nest monitoring, and protocol level burrowing owl surveys. Monitors construction activities. 2014-2015.

Promontory Open Space, El Dorado Hills, El Dorado County California. Conducted biological, botanical, delineation, and protocol level breeding season CRLF surveys. Prepared Delineation, Biological Resources Assessment, and CRLF Breeding Survey Report. 2015-2016.

Saratoga Offsite Improvements, El Dorado Hills, El Dorado County, California. Conducted biological and protocol level breeding and nonbreeding season CRLF surveys. Prepared Biological Letter Report and CRLF Breeding and Nonbreeding Letter Report. 2015-2016.

El Dorado Hills 52, El Dorado Hills, El Dorado County, California. Conducted delineation, botanical, and protocol level breeding season CRLF surveys. Prepared Biological Resources Assessment, Wetland Delineation, and Wetland Design Setback Letter Report. 2016.

FOOTHILL ASSOCIATES

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Marisa Brilts

Biologist

Education

Bachelor of Science, Environmental Studies, California State University, Sacramento, CA, 2013

Permits

California Endangered Species Act, Native Plant Protection Act, Plant Voucher Collecting Permit No. 2081(a)-15-111-V

California Department of Fish and Wildlife Scientific Collection Permit No. 9307

Affiliations

Court Appointed Special Advocate (CASA)

Experience

Solano Rescore Conservation District, Watershed Restoration/ Outdoor Educator

Intern, Sacramento State University, Greenhouse

Teaching assistant, California State University, Sacramento, Ethnobotany and Ethnoecology

Marisa Mara Brilts is a biologist with a background in environmental studies. Marisa has experience in plant identification, watershed monitoring and wetland delineation using the California Rapid Assessment Method (CRAM). She has experience in riparian plant restoration and watershed science. She also has a background in outdoor education, teaching children and adults about effective stewardship and watershed science.

Representative Experience

Promontory Village 7, El Dorado County, CA. Marisa assisted in four evening surveys for California Red-legged frog (*Rana draytonii*; CRLF) for the approximately 182-acre Promontory Village 7 Project site, in El Dorado County. 2016.

Promontory Open Space, El Dorado County, CA. Marisa assisted in four evening surveys for California Red-legged frog (*Rana draytonii*; CRLF). 2016.

El Dorado Hills 52, El Dorado County, CA. Marisa assisted in four evening surveys for the California Red-legged frog (*Rana draytonii*; CRLF), for the 32.2-acre El Dorado Hills Project. 2016.

Carson Creek Project, El Dorado County, CA. Marisa conducted on-site construction monitoring along waterways and for special-status species in support of the California Department of Fish and Wildlife, Streambed and Alteration Agreement (CDFW) for the development. She also assisted in four evening surveys for the California Red-legged frog (*Rana draytonii*; CRLF), for the 423-acre site. 2015-2016.

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Appendix B — California Red-Legged Frog Survey Data Sheets

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ______________ (FWS Field Office) ______ (date) ______________ (biologist)

Date of Survey: 07/01/2015 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: ______________ (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7

Brief description of proposed action:

Type of Survey (circle one): [✓ **DAY**] **NIGHT** **BREEDING** [✓ **NON-BREEDING**]

Survey number (circle one): [✓ **1**] **2** **3** **4** **5** **6** **7** **8**

Begin Time: 2:00 P.M.

End Time: 5:15 P.M.

Cloud cover: Hazy

Precipitation: None

Air Temperature: 101°F

Water Temperature: 78°F

Wind Speed: 0.66 mph

Visibility Conditions: Clear

Moon phase: Full moon

Humidity: None

Description of weather conditions: Calm

Brand name and model of light used to conduct surveys: N/A

Were binoculars used for the surveys (circle one)**?** [✓ **YES**] **NO**

Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
None					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons:

Perennial drainage - ponded water
Intermittent drainage- no water

Other notes, observations, comments, *etc.*

Black phoebe, great horned owl, black tailed deer, golden eagle, California ground squirrel, scrub jay, mourning dove, and vulture.

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ________ (FWS Field Office) ____ (date) ________ (biologist)

Date of Survey: 07/01/2015 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: ________ (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7
Brief description of proposed action:

Type of Survey (circle one): **DAY [✓ NIGHT]** **BREEDING [✓ NON-BREEDING]**

Survey number (circle one): **1 [✓ 2] 3 4 5 6 7 8**

Begin Time: 10:45 P.M.

End Time: 11:45 P.M.

Cloud cover: Hazy

Precipitation: None

Air Temperature: 89°F

Water Temperature: 86°F

Wind Speed: 0.05 mph

Visibility Conditions: Clear

Moon phase: Full moon

Humidity: None

Description of weather conditions: warm/ calm

Brand name and model of light used to conduct surveys: Energizer 4-D Cell

Were binoculars used for the surveys (circle one)**?** **[✓ YES] NO**
Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Sierran treefrog (Pseudacris sierra)	100's	H	Adult	N/A	100%
Sierran treefrog (Pseudacris sierra)	10's	H	Adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ____________________

Other notes, observations, comments, *etc.*

Water strider in perennial drainage.

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ______________________ (FWS Field Office) __________ (date) ______________________ (biologist)

Date of Survey: 01/12/2016 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: ______________________ (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7

Brief description of proposed action:

Type of Survey (circle one): [✓ **DAY**] **NIGHT** [✓ **BREEDING**] **NON-BREEDING**

Survey number (circle one): **1** **2** [✓ **3**] **4** **5** **6** **7** **8**

Begin Time: 2:05 P.M.

End Time: 3:15 P.M.

Cloud cover: Hazy

Precipitation: None

Air Temperature: 60°F

Water Temperature: 58°F

Wind Speed: 4.15 mph

Visibility Conditions: Clear

Moon phase: Waxing crescent

Humidity: 66%

Description of weather conditions: mild

Brand name and model of light used to conduct surveys: N/A

Were binoculars used for the surveys (circle one)**?** [✓ **YES**] **NO**

Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
None					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ______

Other notes, observations, comments, *etc.*

long-eared owl, scrub jay, California ground squirrel, northern mockingbird, house sparrow, black phoebe, and acorn woodpecker.

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ______________ ________ ________________
(FWS Field Office) (date) (biologist)

Date of Survey: 01/12/2016
(mm/dd/yyyy)

Survey Biologist: Bayne, Kelly
(Last name) (first name)

Survey Biologist: ________________
(Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7
Brief description of proposed action:

Type of Survey (circle one): **DAY [✓ NIGHT]** **[✓ BREEDING] NON-BREEDING**

Survey number (circle one): **1 2 3 [✓ 4] 5 6 7 8**

Begin Time: 6:35 P.M.

End Time: 7:25 P.M.

Cloud cover: Overcast

Precipitation: None

Air Temperature: 49°F

Water Temperature: 56°F

Wind Speed: 0.38 mph

Visibility Conditions: Clear

Moon phase: Waxing crescent

Humidity: 66%

Description of weather conditions: ________________

Brand name and model of light used to conduct surveys: Browning ProHunter RGB

Were binoculars used for the surveys (circle one)**?** **[✓ YES] NO**
Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Sierran treefrog (Pseudacris sierra)	10's	H	Adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ______________________

Other notes, observations, comments, *etc.*

Mosquito fish

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ______________________ (FWS Field Office) __________ (date) ______________________ (biologist)

Date of Survey: 01/26/2016 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: Brilts, Marisa (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7
Brief description of proposed action:

Type of Survey (circle one): **DAY [✓ NIGHT]** **[✓ BREEDING] NON-BREEDING**

Survey number (circle one): **1 2 3 4 [✓ 5] 6 7 8**

Begin Time: 6:45 P.M.

End Time: 7:30 P.M.

Cloud cover: Overcast

Precipitation: None

Air Temperature: 51°F

Water Temperature: 50°F

Wind Speed: 0.35 mph

Visibility Conditions: Clear

Moon phase: Waning gibbons

Humidity: 0%

Description of weather conditions: ______________________

Brand name and model of light used to conduct surveys: Browning ProHunter RGB

Were binoculars used for the surveys (circle one)**?** **[✓ YES] NO**
Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Sierran treefrog (Pseudacris sierra)	10's	O	Adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ____________________

Other notes, observations, comments, *etc.*

Heard owl call

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ____________ (FWS Field Office) ______ (date) ____________ (biologist)

Date of Survey: 02/02/2016 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: ____________ (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7
Brief description of proposed action:

Type of Survey (circle one): [✓ DAY] NIGHT [✓ BREEDING] NON-BREEDING

Survey number (circle one): 1 2 3 4 5 [✓ 6] 7 8

Begin Time: 2:00 P.M.

End Time: 3:30 P.M.

Cloud cover: Overcast

Precipitation: None

Air Temperature: 47°F

Water Temperature: 46°F

Wind Speed: 0.2 mph

Visibility Conditions: Clear

Moon phase: 37% waning crescent

Humidity: 85%

Description of weather conditions: ____________

Brand name and model of light used to conduct surveys: N/A

Were binoculars used for the surveys (circle one)**?** [✓ YES] NO
Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
None					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ______________________________

Other notes, observations, comments, *etc.*

Blue jay, northern flicker, golden eagle, scrub jay, acorn woodpecker, northern mockingbird, mourning dove, red-winged hawk, California ground squirrel, and chickadee.

California Red-legged Frog Survey Data Sheet

Survey results reviewed by ______________ (FWS Field Office) ________ (date) ______________ (biologist)

Date of Survey: 02/02/2016 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: Brilts, Marisa (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

ATTACH A MAP (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7

Brief description of proposed action:

Type of Survey (circle one): **DAY [✓ NIGHT]** **[✓ BREEDING] NON-BREEDING**

Survey number (circle one): **1 2 3 4 5 6 [✓ 7] 8**

Begin Time: 7:45 P.M.

End Time: 8:30 P.M.

Cloud cover: Clear

Precipitation: None

Air Temperature: 47°F

Water Temperature: 45°F

Wind Speed: 2.5 mph

Visibility Conditions: Clear

Moon phase: 37% waning crescent

Humidity: 85%

Description of weather conditions:

Brand name and model of light used to conduct surveys: Browning Pro Hunter RGB

Were binoculars used for the surveys (circle one)**?** **[✓ YES] NO**

Brand, model, and power of binoculars: Nikon Monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
None					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ______

Other notes, observations, comments, *etc.*

Scrub jay and mourning dove.

California Red-legged Frog Survey Data Sheet

Survey results reviewed by __________ (FWS Field Office) ______ (date) __________ (biologist)

Date of Survey: 02/09/2016 (mm/dd/yyyy)

Survey Biologist: Bayne, Kelly (Last name) (first name)

Survey Biologist: Brilts, Marisa (Last name) (first name)

Site Location: El Dorado, CA, Promontory Village 7, Township 10N, Range 8E, Sec 28, 33 & 34

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Promontory Village 7

Brief description of proposed action:

Type of Survey (circle one): **DAY [✓ NIGHT]** **[✓ BREEDING] NON-BREEDING**

Survey number (circle one): **1 2 3 4 5 6 7 [✓ 8]**

Begin Time: 6:55 P.M.

End Time: 7:55 P.M.

Cloud cover: high clouds

Precipitation: N/A

Air Temperature: 62°F

Water Temperature: 60°F

Wind Speed: 3.5 mph

Visibility Conditions: Clear

Moon phase: 1% full waxing crescent

Humidity: 46%

Description of weather conditions: calm

Brand name and model of light used to conduct surveys: Browning Pro-hunter RGB

Were binoculars used for the surveys (circle one)**? [✓ YES] NO**

Brand, model, and power of binoculars: Nikon monarch 8x42

California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Sierran treefrog (Pseudacris sierra)	10's	H	Adult	N/A	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: ____________________

____

____

____

____

Other notes, observations, comments, *etc.*

Mourning dove and scrub jay

Appendix C — Representative Site Photographs

Photograph 1: View east of the intermittent drainage and the riparian vegetation and non-native annual grassland surrounding the intermittent drainage within the southern portion of the Study Area.

Date: June 17, 2015 Photographer: K. Bayne

Photograph 2: View west of the dense riparian vegetation where the perennial drainage initiates within the eastern portion of the Study Area.

Date: July 1, 2015 Photographer: K. Bayne

REPRESENTATIVE SITE PHOTOGRAPHS

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PROMONTORY VILLAGE 7

Photograph 3: View northwest of the dense riparian vegetation surrounding the perennial drainage.

Date: July 1, 2015 Photographer: K. Bayne

Photograph 4: View southwest of the dense riparian vegetation surrounding the perennial drainage.

Date: July 1, 2015 Photographer: K. Bayne

REPRESENTATIVE SITE PHOTOGRAPHS

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APPENDIX C

PROMONTORY VILLAGE 7

Photograph 5: View northwest of the ponded water within the northern portion of the perennial drainage.

Date: July 1, 2015 Photographer: K. Bayne

Photograph 6: View southeast of the dense riparian vegetation surrounding the perennial drainage within the northern boundary of the Study Area.

Date: July 1, 2015 Photographer: K. Bayne

REPRESENTATIVE SITE PHOTOGRAPHS

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APPENDIX C

PROMONTORY VILLAGE 7